AIR FORCE SITE CHARACTERIZATION AND ANALYSIS PENETROMETER SYSTEM (AFSCAPS): LASER-INDUCED FLUORESCENCE CONE
PENETROMETER - ANALYTICAL TESTING DATA SHEETS
(VOL V OF V - PART 2 OF 2)

James D. Shinn, Wesley L. Bratton



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ENVIRONICS DIRECTORATE 139 Barnes Drive, Suite 2 Tyndall AFB FL 32403-5323

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APPENDIX I

ANALYTICAL RESULTS FROM SOIL SAMPLES FROM BLDG 3001 OUTFALL-EAST SOLDIER CREEK

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F	Accesion	For		_
	NTIS (DTIC 7 Unanno Justifica	TAB unced	*	
	By Distribu	ition/		
1	A	vailability	Codes	
	Dist	Avail a Spe	nd / or cial	
	A-1			



Analytical Chemistry • Utility Operations

11/05/92

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification:

OSC-B01-SS1 @16'

Collected By:

JPJ

Date & Time Taken:

09/25/92 1750

Other Data: AFSCAPS Job #5735, Tinker AFB

Bottle Data:

1 -- Unpreserved Plastic/Glass (00)

Lab Sample Number: 221835

Received: 09/28/92

Client: ARS1 PARAMETER BY RESULTS EQL METHOD UNITS ANALYZED Phenols ND mg/kg 1500 10/05/92 5 EPA Method 420.1 UMB Phenol Distillation DISTILLED 1730 10/02/92 EPA Method 420.1 KC Total Arsenic 1136 10/15/92 EPA Method 6010 RJC ND mg/kg Total Barium EPA Method 6010 32 1136 10/15/92 RJC mg/kg Total Cadmium ND 1136 10/15/92 EPA Method 6010 RJC . 1 mg/kg 5.6 EPA Method 6010 Total Chromium mg/kg 1136 10/15/92 .2 RJC .05 EPA Method 7470 1400 10/02/92 SY Total Mercury ND mg/kg Total Nickel 3.3 1244 10/14/92 EPA Method 6010 RJC mg/kg Total Lead EPA Method 6010 2 mg/kg 1136 10/15/92 RJC Total Zinc 4.1 EPA Method 6010 RJC mg/kg 1244 10/14/92 . 1 Metals Digestion - 3050 Fl EPA Method 3050 Fl JHL Digested 50/4 0730 10/08/92 Metals Digestion - 7471 EPA Method 7471 JHL Digested 50/1 0845 10/02/92

Quality Assurance for the SET with Sample 221835

Sample #	Description	Result	Units	Dup/Std Value	Spk Conc.	Percent	Time	Date	Ву
				Pheno	ls				
	Blank	<.02	mg/l				1500	10/05/92	WMB
	Standard	.050	mg/l	.050	, .	100	1500	10/05/92	WMB
222287	Duplicate	.02	mg/l	.02		100	1500	10/05/92	WMB
				Total Ar	senic				
	Blank	<.1	mg/l				1136	10/15/92	RJC



Analytical Chemistry • Utility Operations

11/05/92

221835 Continued

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Sample #	Description	Danul +							
ounpie #	Blank	Result	Units	Dup/Std Va	alue Spk Conc.	Percent	Time	Date	Ву
	Standard	1.0	mg/l				1136	10/15/92	RJC
	Standard	2.2	mg/l	1.0		100	1136	10/15/92	RJC
	Standard	.99	mg/l	2.0		110	1136	10/15/92	RJC
	Standard	2.0	mg/l	1.0		101	1136	10/15/92	RJC
	Standard	1.1	mg/l	2.0		100	1136	10/15/92	RJC
	Standard	.7	mg/l mg/l	1.0		110	1136	10/15/92	RJC
	Standard	1.1	mg/l	.6 1.0		115	1136	10/15/92	RJC
222319	Duplicate	ND	mg/l	ND		110	1136	10/15/92	RJC
221715	Duplicate	1	mg/kg			100	1136	10/15/92	RJC
221855	Duplicate	5	mg/kg	1 3		100	1136	10/15/92	RJC
221864	Duplicate	5	mg/kg	5		150	1136	10/15/92	RJC
222319	Spike	-	mg/kg	,	2.0	100	1136	10/15/92	RJC
221855	Spike		mg/l		2.0	109	1136	10/15/92	RJC
221864	Spike		mg/l		2.0	93	1136	10/15/92	RJC
221715	Spike		mg/l		2.0	109	1136	10/15/92	RJC
	,		g/ t	Total	5.0 Barium	89	1136	10/15/92	RJC
	Blank	.02	mg/l	TOTAL	Dallum				
	Blank	<.01	mg/l				1136	10/15/92	RJC
	Standard	1.0	mg/l	1.0		444	1136	10/15/92	RJC
	Standard	5.1	mg/l	5.0		100	1136	10/15/92	RJC
	Standard	1.0	mg/l	1.0		102	1136	10/15/92	RJC
	Standard	1.7	mg/l	2.0		100	1136	10/15/92	RJC
	Standard	1.0	mg/l	1.0		116	1136	10/15/92	RJC
	Standard	2.1	mg/l	2.0		100	1136	10/15/92	RJC
	Standard	10	mg/l	10		105	1136	10/15/92	RJC
	Standard	1.0	mg/l	1.0		100	1136	10/15/92	RJC
221715	Duplicate	580	mg/kg	560		100	1136	10/15/92	RJC
221855	Duplicate	200	mg/kg	180		104	1136	10/15/92	RJC
221864	Duplicate	22	mg/kg	20		111	1136	10/15/92	RJC
221864	Spike		mg/l	20	2.0	110	1136	10/15/92	RJC
221715	Spike		mg/l		5.0	91	1136	10/15/92	RJC
221855	Spike		mg/l		2.0	110	1136	10/15/92	RJC
				Total C		98	1136	10/15/92	RJC
	Blank	<.01	mg/l	10041	admium				
	Blank	<.01	mg/l				1136	10/15/92	RJC
	Standard	.53	mg/l	.50		10/	1136	10/15/92	RJC
	Standard	2.2	mg/l	2.0		106	1136	10/15/92	RJC
	Standard	2.6	mg/l	2.5		110	1136	10/15/92	RJC
	Standard	.53	mg/l	.50		104	1136	10/15/92	RJC
	Standard	1.7	mg/l	2.0		106	1136	10/15/92	RJC
	Standard	.54	mg/l	.50		116	1136	10/15/92	RJC
	Standard	.52	mg/l	.50		108	1136	10/15/92	RJC
222319	Duplicate	ND	mg/l	ND		104	1136	10/15/92	RJC
221715	Duplicate	3	mg/kg	3		100	1136	10/15/92	RJC
221855	Duplicate	2	mg/kg	2		100	1136	10/15/92	RJC
	1.	_		-		100	1136	10/15/92	RJC



Analytical Chemistry • Utility Operations

11/05/92

221835 Continued

Page 3

Sample # Description Result Units Dup/Std Value Spk Conc. Percent Time Date Date 221864 Duplicate 3.3 mg/kg 3.0 96 1136 10/15/92 1136 10/15/92 1221855 Spike mg/l 2.0 96 1136 10/15/92 1221854 Spike mg/l 2.0 39 1136 10/15/92 1221854 Spike mg/l 2.0 39 1136 10/15/92 1136 10	Res
	3.3
Blank	
Blank	
Blank Color	
Standard Standard	
Standard S.3	<.0
Standard 1.0	
Standard 1.8 mg/l 2.0 1111 1136 10/15/92 Standard 1.0 mg/l 1.0 100 1136 10/15/92 136 10/15/92	5.3
Standard 1.0 mg/l 1.0 100 1136 10/15/92 Standard 1.1 mg/l 1.0 110 110 1136 10/15/92 136 10/15/92 136 10/15/92 136 10/15/92 136 10/15/92 136 10/15/92 136 10/15/92 136 10/15/92 136 10/15/92 137 136 10/15/92 137 136 10/15/92 137 136 10/15/92 137 136 10/15/92 137 136 10/15/92 137 136 10/15/92 137 136 10/15/92 137 136 10/15/92 137 136 10/15/92 137 136 10/15/92 137 136 10/15/92 137 137 136 10/15/92 137 137 136 10/15/92 137 1	
Standard 1.1	
Standard 1.0 mg/t 1.0 100 1136 10/15/92	1.0
221715	
221855	
221864 Duplicate	
Spike	
221855 Spike	14
221864 Spike	
Spike	
Blank .001 mg/l .025 .104 .1400 .10/02/92 Standard .010 mg/l .010 .100 .100 .1400 .10/02/92 Standard .010 mg/l .010 .010 .100 .1400 .10/02/92 Standard .010 mg/l .010 .010 .100 .1400 .10/02/92 Standard .010 mg/l .010 .111 .1400 .10/02/92 Standard .009 mg/l .010 .111 .1400 .10/02/92 Standard .010 mg/l .010 .100 .1400 .10/02/92 Standard .010 mg/l .010 .100 .1400 .10/02/92 220412 Duplicate ND mg/kg ND .100 .1400 .10/02/92 220803 Duplicate ND mg/kg ND .100 .1400 .10/02/92 220812 Spike mg/l .010 .64 .1400 .10/02/92 220803 Spike mg/l .010 .010 .99 .1400 .10/02/92 220803 Spike mg/l .010 .010 .99 .1400 .10/02/92 220803 Spike mg/l .010 .010 .010 .1244 .10/14/92 220803 Spike mg/l .40 .40 .100 .1244 .10/14/92 Standard .40 mg/l .40 .40 .100 .1244 .10/14/92 Standard .5.2 mg/l .5.0 .104 .1244 .10/14/92 Standard 1.8 mg/l .2.0 .111 .1244 .10/14/92 Standard 1.8 mg/l .2.0 .111 .1244 .10/14/92 Standard .1.0 mg/l .1.0 .100 .1244 .10/14/92 Standard .1.0 mg/l .1.0 .100 .1244 .10/14/92 Standard .5.2 mg/l .5.0 .104 .104 .1244 .10/14/92 Standard .5.2 mg/l .5.0 .104 .104 .104 .104 Standard .5.2 mg/l .5.0 .104 .104 .104 .104 .104 Standard .5.2 mg/l .5.0 .104 .104 .104 .104 .104 .104 Standard .5.2 mg/l .5.0 .104 .104 .104 .104 .104 .104 .104 .104 .104 .104 .104 .104 .104 .10	
Blank .001 mg/l .025 .026 .0297	
Standard .026 mg/l .025 .010 .026 .010 .010 .0292 .010 .0	
Standard .010 mg/l .010 100 1400 10/02/92 Standard .010 mg/l .010 100 1400 10/02/92 Standard .009 mg/l .010 111 1400 10/02/92 Standard .010 mg/l .010 100 1400 10/02/92 220412 Duplicate ND mg/kg ND 100 1400 10/02/92 220412 Spike ND mg/kg ND 100 1400 10/02/92 220412 Spike mg/kg ND 100 1400 10/02/92 220412 Spike mg/kg ND 100 440 10/02/92 220412 Spike mg/k ND .010 99 1400 10/02/92 220803 Spike mg/k Mg/k .010 99 1400 10/02/92 220803 Spike mg/k .04 100 1244 10/14/92	
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Standard Standard	
Duplicate	
Duplicate	
Spike	
Spike mg/l	ND
Total Nickel Blank <.05 mg/l 1244 10/14/92 Blank <.05 mg/l 1244 10/14/92 Standard .40 mg/l .40 100 1244 10/14/92 Standard 2.1 mg/l 2.0 105 1244 10/14/92 Standard 5.2 mg/l 5.0 104 1244 10/14/92 Standard 1.8 mg/l 2.0 111 1244 10/14/92 Standard 1.0 mg/l 1.0 100 1244 10/14/92 Standard 5.2 mg/l 5.0 104 1244 10/14/92 Standard 5.2 mg/l 5.0 104 1244 10/14/92	
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Blank <.05	- 0
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Standard 1.0 mg/l 1.0 100 1244 10/14/92 Standard 5.2 mg/l 5.0 104 1244 10/14/92	
Standard 5.2 mg/l 5.0 104 1244 10/14/92	
Standard IV mg/t IV 100 100 1744 10/14/92	
Standard 5.5 mg/l 5.0 110 1244 10/14/92 222319 Duplicate ND mg/l ND 100 1244 10/14/92	



Analytical Chemistry • Utility Operations

221835 Continued

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								•	
Sample #	Description	Result	Units	Dup/Std Val	ue Spk Conc.	_			
221715	Duplicate	8.4	mg/kg	9.1	ue spk conc.	Percent	Time	Date	By
221855	Duplicate	4.6	mg/kg	4.0		108	1244	10/14/92	RJC
222319	Spike		mg/l	4.0	2.0	114	1244	10/14/92	RJC
221715	Spike		mg/l		2.0	99	1244	10/14/92	RJC
221855	Spike		mg/l		2.0	88	1244	10/14/92	RJC
			3/ 1	Total	Lead	92	1244	10/14/92	RJC
	Blank	<.1	mg/l	10041	nead				
	Blank	<.1	mg/l				1136	10/15/92	RJC
	Standard	1.0	mg/l	1.0			1136	10/15/92	RJC
	Standard	2.1	mg/l	2.0		100	1136	10/15/92	RJC
	Standard	5.2	mg/l	5.0		105	1136	10/15/92	RJC
	Standard	1.1	mg/l	1.0		104	1136	10/15/92	RJC
	Standard	1.8	mg/l	2.0		110	1136	10/15/92	RJC
	Standard	1.1	mg/l	1.0		111	1136	10/15/92	RJC
	Standard	.62	mg/l	.60		110	1136	10/15/92	RJC
	Standard	1.0	mg/l	1.0		103	1136	10/15/92	RJC
222319	Duplicate	ND	mg/l	ND		100	1136	10/15/92	RJC
221715	Duplicate	5	mg/kg	4		100	1136	10/15/92	RJC
221855	Duplicate	2	mg/kg	2		122	1136	10/15/92	RJC
221864	Duplicate	5	mg/kg	4		100	1136	10/15/92	RJC
222319	Spike	-	mg/kg	4		122	1136	10/15/92	RJC
221855	Spike		mg/l		2.0	95	1136	10/15/92	RJC
221864	Spike		mg/l		2.0	90	1136	10/15/92	RJC
221715	Spike		mg/l		2.0	93	1136	10/15/92	RJC
	•		mg/ t	motal.	5.0	89	1136	10/15/92	RJC
	Blank	<.01	mg/l	Total	zinc				
	Blank	.02	mg/l				1244	10/14/92	RJC
	Standard	.21	mg/l	20			1244	10/14/92	RJC
	Standard	2.0	mg/t	.20		105	1244	10/14/92	RJC
	Standard	5.2		2.0		100	1244	10/14/92	RJC
	Standard	1.8	mg/l	5.0		104	1244	10/14/92	RJC
	Standard	1.1	mg/l	2.0		111	1244	10/14/92	RJC
	Standard	5.3	mg/l	1.0		110	1244	10/14/92	RJC
	Standard	10	mg/l	5.0		106	1244	10/14/92	RJC
222319	Duplicate	.80	mg/l	10		100	1244	10/14/92	RJC
21715	Duplicate	14	mg/l	.77		104	1244	10/14/92	RJC
21855	Duplicate	7.3	mg/kg	16		113	1244	10/14/92	RJC
22319	Spike	1.3	mg/kg	5.9		121	1244	10/14/92	RJC
21715	Spike		mg/l		2.0	95	1244	10/14/92	RJC
21855	Spike		mg/l		2.0	93	1244	10/14/92	RJC
	SPINE .		mg/l		2.0	95	1244	10/14/92	RJC

I certify that the results were generated using the above specified methods.

C.H. Whiteside, Ph.D. President



Analytical Chemistry • Utility Operations

11/05/92

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification:

OSC-B02-SS1 @11'

Collected By: JPJ

Date & Time Taken:

09/25/92

Other Data: AFSCAPS Job #5735, Tinker AFB

Bottle Data: 1 -- Unpreserved Plastic/Glass (00)

Lab Sample Number: 221836 Received: 09/28/92

Client: ARS1

_				05/20/52		Client: A	ARS1
	PARAMETER Phenols	RESULTS	UNITS	ANALYZED	EQL	METHOD	ВУ
		ND	mg/kg	1500 10/05/92	5	EPA Method 420.1	WMB
	Phenol Distillation	DISTILLED		2030 10/02/92		EPA Method 420.1	KC
	Total Arsenic	4	mg/kg	1136 10/15/92	1	EPA Method 6010	RJC
	Total Barium	170	mg/kg	1136 10/15/92	.1	EPA Method 6010	RJC
	Total Cadmium	5	mg/kg	1136 10/15/92	.1	EPA Method 6010	RJC
	Total Chromium	21	mg/kg	1136 10/15/92	.2	EPA Method 6010	RJC
	Total Mercury	ND	mg/kg	1400 10/02/92	.05	EPA Method 7470	SY
	Total Nickel	14	mg/kg	1244 10/14/92	.6	EPA Method 6010	RJC
	Total Lead	5	mg/kg	1136 10/15/92	1	EPA Method 6010	RJC
	Total Zinc	21	mg/kg	1244 10/14/92	.1	EPA Method 6010	RJC
	Metals Digestion - 3050 Fl	Digested 50/4		0730 10/08/92		EPA Method 3050 Fl	JHL
	Metals Digestion - 7471	Digested 50/1		0845 10/02/92		EPA Method 7471	JHL

Quality Assurance for the SET with Sample 221836

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Sample #	Description	Result	Units	Dup/Std Value Spk Conc. Phenols	Percent	Time	Date	By
222287	Blank Standard Duplicate	<.02 .050 .02	mg/l mg/l mg/l	.050 .02 Total Arsenic	100 100	1500 1500 1500	10/05/92 10/05/92 10/05/92	WMB WMB WMB
	Blank	<.1	mg/l	rotal Arsenic		1136	10/15/92	RJC



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Sample #	Description	Result	Units	Dup/Std Value	Spk Conc	Percent	Time	Date	By
Sample #	Blank	<.1	mg/l	bup/sta vatue	Spk Conc.	rercent	1136	10/15/92	RJC
	Standard	1.0	mg/l	1.0		100	1136	10/15/92	RJC
	Standard	2.2	mg/t	2.0		110	1136	10/15/92	RJC
	Standard	.99	mg/l	1.0		101	1136	10/15/92	RJC
	Standard	2.0	mg/l	2.0		100	1136	10/15/92	RJC
	Standard	1.1	mg/l	1.0		110	1136	10/15/92	RJC
	Standard	.7	mg/l	.6		115	1136	10/15/92	RJC
	Standard	1.1	mg/l	1.0		110	1136	10/15/92	RJC
222319	Duplicate	ND	mg/l	ND		100	1136	10/15/92	RJC
221715	Duplicate	1	mg/kg	1		100	1136	10/15/92	RJC
221855	Duplicate	5	mg/kg	3		150	1136	10/15/92	RJC
221864	Duplicate	5	mg/kg	5		100	1136	10/15/92	RJC
222319	Spike	,	mg/l	,	2.0	109	1136	10/15/92	RJC
221855	Spike		mg/t		2.0	93	1136	10/15/92	RJC
221864	Spike		mg/l		2.0	109	1136	10/15/92	RJC
221715	Spike		mg/l		5.0	89	1136	10/15/92	RJC
221713	Spike		ilig/ t	Total B		0 7	1130	10, 13, 72	,,,,,
	Blank	.02	mg/l				1136	10/15/92	RJC
	Blank	<.01	mg/l				1136	10/15/92	RJC
	Standard	1.0	mg/l	1.0		100	1136	10/15/92	RJC
	Standard	5.1	mg/l	5.0		102	1136	10/15/92	RJC
	Standard	1.0	mg/l	1.0		100	1136	10/15/92	RJC
	Standard	1.7	mg/l	2.0		116	1136	10/15/92	RJC
	Standard	1.0	mg/l	1.0		100	1136	10/15/92	RJC
	Standard	2.1	mg/l	2.0		105	1136	10/15/92	RJC
	Standard	10	mg/l	10		100	1136	10/15/92	RJC
	Standard	1.0	mg/l	1.0		100	1136	10/15/92	RJC
221715	Duplicate	580	mg/kg	560		104	1136	10/15/92	RJC
221855	Duplicate	200	mg/kg	180		111	1136	10/15/92	RJC
221864	Duplicate	22	mg/kg	20		110	1136	10/15/92	RJC
221864	Spike		mg/t		2.0	91	1136	10/15/92	RJC
221715	Spike		mg/l		5.0	110	1136	10/15/92	RJC
221855	Spike		mg/l		2.0	98	1136	10/15/92	RJC
				Total Ca					
	Blank	<.01	mg/l				1136	10/15/92	RJC
	Blank	<.01	mg/l				1136	10/15/92	RJC
	Standard	.53	mg/l	.50		106	1136	10/15/92	RJC
	Standard	2.2	mg/l	2.0		110	1136	10/15/92	RJC
	Standard	2.6	mg/l	2.5		104	1136	10/15/92	RJC
	Standard	.53	mg/l	.50		106	1136	10/15/92	RJC
	Standard	1.7	mg/l	2.0		116	1136	10/15/92	RJC
	Standard	.54	mg/l	.50		108	1136	10/15/92	RJC
	Standard	.52	mg/l	.50		104	1136	10/15/92	RJC
222319	Duplicate	ND	mg/l	ND		100	1136	10/15/92	RJC
221715	Duplicate	3	mg/kg	3		100	1136	10/15/92	RJC
221855	Duplicate	2	mg/kg	2		100	1136	10/15/92	RJC



Analytical Chemistry • Utility Operations

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Sample #	Description	Result	Units	Dup/Std Va	due only o				
221864	Duplicate	3.3	mg/kg	3.0	alue Spk Conc.	Percent	Time	Date	Ву
222319	Spike		mg/L	3.0	2.0	110	1136	10/15/92	RJC
221855	Spike		mg/l		2.0	96	1136	10/15/92	RJC
221864	Spike		mg/l		2.0	91	1136	10/15/92	RJC
221715	Spike		mg/l		2.0	89	1136	10/15/92	RJC
			mg/ t	Total	2.0 Chromium	104	1136	10/15/92	RJC
	Blank	<.02	mg/l	Total	Chromium				
	Blank	<.02	mg/l				1136	10/15/92	RJC
	Standard	2.2	mg/t	2.0			1136	10/15/92	RJC
	Standard	5.3	mg/l	5.0		110	1136	10/15/92	RJC
	Standard	1.0	mg/t			106	1136	10/15/92	RJC
	Standard	1.8	mg/l	1.0		100	1136	10/15/92	RJC
	Standard	1.0		2.0		111	1136	10/15/92	RJC
	Standard	.11	mg/l	1.0		100	1136	10/15/92	RJC
	Standard	1.0	mg/l	.10		110	1136	10/15/92	RJC
222319	Duplicate	.02	mg/l	1.0		100	1136	10/15/92	RJC
221715	Duplicate	11	mg/l	.02		100	1136	10/15/92	RJC
221855	Duplicate	8	mg/kg	15		131	1136	10/15/92	RJC
221864	Duplicate	14	mg/kg	7		113	1136	10/15/92	RJC
222319	Spike	14	mg/kg	12		115	1136	10/15/92	RJC
221855	Spike		mg/l		2.0	99	1136	10/15/92	RJC
221864	Spike		mg/l		2.0	94	1136	10/15/92	RJC
221715	Spike		mg/l		2.0	92	1136	10/15/92	RJC
	op i ne		mg/l		5.0	92	1136	10/15/92	RJC
	Blank	004		Total M	lercury			.0, .0, ,2	KJC
	Standard	.001	mg/l				1400	10/02/92	SY
	Standard	.026	mg/l	.025		104	1400	10/02/92	SY
	Standard	-010	mg/l	.010		100	1400	10/02/92	SY
	Standard	.010	mg/l	.010		100	1400	10/02/92	SY
	Standard	.009	mg/l	.010		111	1400	10/02/92	SY
220412	Duplicate	.010	mg/l	.010		100	1400	10/02/92	SY
220803	Duplicate	ND	mg/kg	ND		100	1400	10/02/92	
220412	Spike	ND	mg/kg	ND		100	1400	10/02/92	SY SY
220803	Spike		mg/l		.010	64	1400	10/02/92	
	Spike		mg/l		.010	99	1400	10/02/92	SY SY
	Blank	. 05		Total 1	Nickel			10,02,72	31
	Blank	<.05	mg/l				1244	10/14/92	0.10
	Standard	<.05	mg/l				1244	10/14/92	RJC
		.40	mg/l	.40		100	1244	10/14/92	RJC
	Standard	2.1	mg/l	2.0		105	1244	10/14/92	RJC
	Standard	5.2	mg/l	5.0		104	1244	10/14/92	RJC
	Standard	1.8	mg/l	2.0		111	1244	10/14/92	RJC
	Standard	1.0	mg/l	1.0		100	1244	10/14/92	RJC
	Standard	5.2	mg/l	5.0		104	1244		RJC
	Standard	10	mg/i	10	: .	100	1244	10/14/92	RJC
22319	Standard	5.5	mg/l	5.0		110	1244	10/14/92	RJC
	Duplicate	ND	mg/l	ND		100	1677	10/14/92	RJC

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Sample #	Description	Result	Units	Dup/Std Value	Spk Conc.	Percent	Time	Date	Ву
221715	Duplicate	8.4	mg/kg	9.1		108	1244	10/14/92	RJ(
221855	Duplicate	4.6	mg/kg	4.0		114	1244	10/14/92	RJO
222319	Spike		mg/l		2.0	99	1244	10/14/92	RJC
221715	Spike		mg/l		2.0	88	1244	10/14/92	RJC
221855	Spike		mg/l		2.0	92	1244	10/14/92	RJC
				Total	Lead	_		10, 14, 72	NOC
	Blank	<.1	mg/l				1136	10/15/92	RJC
	Blank	<.1	mg/l				1136	10/15/92	RJC
	Standard	1.0	mg/l	1.0		100	1136	10/15/92	RJC
	Standard	2.1	mg/l	2.0		105	1136	10/15/92	RJC
	Standard	5.2	mg/l	5.0		104	1136	10/15/92	RJC
	Standard	1.1	mg/l	1.0		110	1136	10/15/92	RJC
	Standard	1.8	mg/l	2.0		111	1136	10/15/92	RJC
	Standard	1.1	mg/l	1.0		110	1136	10/15/92	RJC
	Standard	.62	mg/l	.60		103	1136	10/15/92	RJC
	Standard	1.0	mg/l	1.0		100	1136	10/15/92	RJC
222319	Duplicate	ND	mg/l	ND		100	1136	10/15/92	RJC
221715	Duplicate	5	mg/kg	4		122	1136	10/15/92	RJC
221855	Duplicate	2	mg/kg	2		100	1136	10/15/92	RJC
221864	Duplicate	5	mg/kg	4		122	1136	10/15/92	RJC
222319	Spike		mg/t		2.0	95	1136	10/15/92	RJC
221855	Spike		mg/l		2.0	90	1136	10/15/92	RJC
221864	Spike		mg/l		2.0	93	1136	10/15/92	RJC
221715	Spike		mg/l		5.0	89	1136	10/15/92	RJC
				Total :	Zinc			10, 12, 12	NGC
	Blank	<.01	mg/l				1244	10/14/92	RJC
	Blank	.02	mg/l				1244	10/14/92	RJC
	Standard	.21	mg/l	.20		105	1244	10/14/92	RJC
	Standard	2.0	mg/l	2.0		100	1244	10/14/92	RJC
	Standard	5.2	mg/l	5.0		104	1244	10/14/92	RJC
	Standard	1.8	mg/l	2.0		111	1244	10/14/92	RJC
	Standard	1.1	mg/l	1.0		110	1244	10/14/92	RJC
	Standard	5.3	mg/l	5.0		106	1244	10/14/92	RJC
	Standard	10	mg/l	10		100	1244	10/14/92	RJC
222319	Duplicate	.80	mg/l	.77		104	1244	10/14/92	RJC
221715	Duplicate	14	mg/kg	16		113	1244	10/14/92	RJC
221855	Duplicate	7.3	mg/kg	5.9		121	1244	10/14/92	RJC
222319	Spike		mg/l		2.0	95	1244	10/14/92	RJC
221715	Spike		mg/l		2.0	93	1244	10/14/92	RJC
221855	Spike		mg/l		2.0	95	1244	10/14/92	RJC

I certify that the results were generated using the above specified methods.

C.H. Whiteside, Ph.D., President



Analytical Chemistry • Utility Operations

11/05/92

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification:

OSC-G01 0.1'-0.5' Outfall

Collected By:

JPJ

09/26/92 1200

Date & Time Taken:

Other Data: AFSCAPS Job #5735, Tinker AFB

Bottle Data: 1 -- Unpreserved Plastic/Glass (00)

Lab Sample Number: 221837

Received: 09/28/92

	22103/	Received	09/28/92		Client:	APC1
PARAMETER Phenols	RESULTS	UNITS mg/kg	ANALYZED	EQL	METHOD	BY
Phenol Distillation		mg/kg	1500 10/05/92	5	EPA Method 420.1	WMB
	DISTILLED		2030 10/02/92		EPA Method 420.1	KC
Total Arsenic	2	mg/kg	1136 10/15/92	1		
Total Barium	500	mg/kg		•	EPA Method 6010	RJC
Total Cadmium	700	3/ ^3	1136 10/15/92	.1	EPA Method 6010	RJC
Total Charact	390	mg/kg	1136 10/15/92	.1	EPA Method 6010	RJC
Total Chromium	800	mg/kg	1136 10/15/92	.2	EPA Method 6010	
Total Mercury	.4	mg/kg	1400 10 (02 (02			RJC
Total Nickel	300	-	1400 10/02/92	.05	EPA Method 7470	SY
Total Lead	300	mg/kg	1244 10/14/92	.6	EPA Method 6010	RJC
, order Lead	320	mg/kg	1136 10/15/92	1	EPA Method 6010	D : C
Total Zinc	340	mg/kg	1244 10/14/92			RJC
Metals Digestion - 3050 Fl	Digested 50/4			.1	EPA Method 6010	RJC
Metals Digestion - 7471			0730 10/08/92		EPA Method 3050 Fl	JHL
- 30001011 [4][Digested 50/1		0845 10/02/92		EPA Method 7471	JHL
Quality	Assurance	fan 11				UIIL

Quality Assurance for the SET with Sample 221837

Sample #	Description	Result	Units	· · · · · · · · · · · · · · · · · · ·	• • • • • • •		• • • • • •	
	Blank	<.02		Dup/Std Value Spk Conc. Phenols	Percent	Time	Date	Ву
222287	Standard Duplicate	.050	mg/l mg/l mg/l	.050	100	1500 1500	10/05/92 10/05/92	WMB
	Blank	<.1	mg/l	Total Arsenic	100	1500	10/05/92	WMB
						1136	10/15/92	RJC



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Sample #	Description	n Result	Units	Dup/Sto	d Value Spk Conc.				
	Blank	<.1	mg/l	,,,,,,	- Total opk conc.	Percent	Time	Date	By
	Standard	1.0	mg/l	1.0		100	1136	10/15/92	RJ(
	Standard	2.2	mg/t	2.0			1136	10/15/92	RJC
	Standard	.99	mg/l	1.0		110	1136	10/15/92	RJC
	Standard	2.0	mg/i	2.0		101	1136	10/15/92	RJC
	Standard	1.1	mg/t	1.0		100	1136	10/15/92	RJC
	Standard	.7	mg/i	.6		110	1136	10/15/92	RJC
222744	Standard	1.1	mg/l	1.0		115	1136	10/15/92	RJC
222319	Duplicate	ND	mg/l	ND		110	1136	10/15/92	RJC
221715	Duplicate	1	mg/kg	1		100	1136	10/15/92	RJC
221855	Duplicate	5	mg/kg	3		100	1136	10/15/92	RJC
221864	Duplicate	5	mg/kg	5 .		150	1136	10/15/92	RJC
222319	Spike		mg/l		2.0	100	1136	10/15/92	RJC
221855	Spike		mg/l			109	1136	10/15/92	RJC
221864	Spike		mg/l		2.0	93	1136	10/15/92	RJC
221715	Spike		mg/l		2.0	109	1136	10/15/92	RJC
				Tota	5.0 1 Barium	89	1136	10/15/92	RJC
	Blank	.02	mg/l	1000	I Barlum				
	Blank	<.01	mg/l				1136	10/15/92	RJC
	Standard	1.0	mg/l	1.0			1136	10/15/92	RJC
	Standard	5.1	mg/l	5.0		100	1136	10/15/92	RJC
	Standard	1.0	mg/l	1.0		102	1136	10/15/92	RJC
	Standard	1.7	mg/l	2.0		100	1136	10/15/92	RJC
	Standard	1.0	mg/l	1.0		116	1136	10/15/92	RJC
	Standard	2.1	mg/l			100	1136	10/15/92	RJC
	Standard	10	mg/l	2.0 10		105	1136	10/15/92	RJC
	Standard	1.0	mg/l			100	1136	10/15/92	RJC
21715	Duplicate	580	mg/kg	1.0		100	1136	10/15/92	RJC
21855	Duplicate	200	_	560		104	1136	10/15/92	RJC
21864	Duplicate	22	mg/kg	180		111	1136	10/15/92	RJC
21864	Spike		mg/kg	20		110	1136	10/15/92	RJC
21715	Spike		mg/l		2.0	91	1136	10/15/92	RJC
21855	Spike		mg/l		5.0	110	1136	10/15/92	RJC
	• • • • • • • • • • • • • • • • • • • •		mg/l	m - + - >	2.0	98	1136	10/15/92	RJC
	Blank	<.01	41	Total	Cadmium			, , , , , ,	KJL
	Blank	<.01	mg/l				1136	10/15/92	D.I.C
	Standard	.53	mg/l				1136	10/15/92	RJC
	Standard	2.2	mg/l	.50		106	1136	10/15/92	RJC
	Standard		mg/l	2.0		110	1136	10/15/92	RJC
	Standard	2.6	mg/l	2.5		104	1136	10/15/92	RJC
	Standard	.53	mg/l	.50		106	1136	10/15/92	RJC
		1.7	mg/l	2.0		116	1136		RJC
	Standard	.54	mg/l	-50		108	1136	10/15/92	RJC
2319	Standard	.52	mg/l	.50		104	1136	10/15/92	RJC
1715	Duplicate	ND	mg/l	ND		100	1136	10/15/92	RJC
1855	Duplicate Duplicate	-	mg/kg	3		100	1136	10/15/92	RJC
	DUDLICATA	2	mg/kg	2			1130	10/15/92	RJC



Analytical Chemistry • Utility Operations

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Sample #	Description	Result	Units	Dup/Std Value	Spk Conc.	Percent	Time	Date	Ву
221864	Duplicate	3.3	mg/kg	3.0	,	110	1136	10/15/92	RJ
222319	Spike		mg/l		2.0	96	1136	10/15/92	RJ(
221855	Spike		mg/l		2.0	91	1136	10/15/92	RJ(
221864	Spike		mg/l		2.0	89	1136	10/15/92	RJ(
221715	Spike		mg/l		2.0	104	1136	10/15/92	RJO
				Total Ch			1130	10/ 13/ 72	Kac
	Blank	<.02	mg/l				1136	10/15/92	RJC
	Blank	<.02	mg/l				1136	10/15/92	RJC
	Standard	2.2	mg/l	2.0		110	1136	10/15/92	RJC
	Standard	5.3	mg/l	5.0		106	1136	10/15/92	RJC
	Standard	1.0	mg/l	1.0		100	1136	10/15/92	RJC
	Standard	1.8	mg/l	2.0		111	1136	10/15/92	RJC
	Standard	1.0	mg/l	1.0		100	1136	10/15/92	RJC
	Standard	.11	mg/l	.10		110	1136	10/15/92	RJC
	Standard	1.0	mg/i	1.0		100	1136	10/15/92	RJC
222319	Duplicate	.02	mg/l	.02		100	1136	10/15/92	RJC
221715	Duplicate	11	mg/kg	15		131	1136	10/15/92	RJC
221855	Duplicate	8	mg/kg	7		113	1136	10/15/92	RJC
221864	Duplicate	14	mg/kg	12		115	1136	10/15/92	RJC
222319	Spike		mg/l		2.0	99	1136	10/15/92	RJC
221855	Spike		mg/l		2.0	94	1136	10/15/92	RJC
221864	Spike		mg/l		2.0	92	1136	10/15/92	RJC
21715	Spike		mg/l		5.0	92	1136	10/15/92	RJC
				Total Mer			,,,,,	10, 13, 72	NO.
	Blank	.001	mg/l		•		1400	10/02/92	SY
	Standard	.026	mg/l	.025		104	1400	10/02/92	SY
	Standard	.010	mg/l	.010		100	1400	10/02/92	SY
	Standard	.010	mg/l	.010		100	1400	10/02/92	SY
	Standard	.009	mg/l	.010		111	1400	10/02/92	SY
	Standard	.010	mg/l	.010		100	1400	10/02/92	SY
20412	Duplicate	ND	mg/kg	ND		100	1400	10/02/92	SY
20803	Duplicate	ND	mg/kg	ND		100	1400	10/02/92	SY
20412	Spike		mg/l		.010	64	1400	10/02/92	SY
20803	Spike		mg/l		.010	99	1400	10/02/92	SY
				Total Ni		• •	1400	10,02,72	31
	Blank	<.05	mg/l				1244	10/14/92	RJC
	Blank	<.05	mg/l				1244	10/14/92	RJC
	Standard	.40	mg/l	.40		100	1244	10/14/92	RJC
	Standard	2.1	mg/l	2.0		105	1244	10/14/92	RJC
	Standard	5.2	mg/l	5.0		104	1244	10/14/92	RJC
	Standard	1.8	mg/l	2.0		111	1244	10/14/92	RJC
	Standard	1.0	mg/l	1.0		100	1244	10/14/92	RJC
	Standard	5.2	mg/l	5.0		104	1244	10/14/92	RJC
	Standard	10	mg/l	10		100	1244	10/14/92	RJC
	Standard	5.5	mg/l	5.0		110	1244	10/14/92	
22319	Duplicate	ND	mg/l	ND		100	1244	10/14/72	RJC RJC



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Sample #	Description	Result	Units	Dup/Std Val	ue Spk Conc.				
221715	Duplicate	8.4	mg/kg	9.1	ue Spk Conc.	Percent	Time	Date	Ву
221855	Duplicate	4.6	mg/kg	4.0		108	1244	10/14/92	RJC
222319	Spike		mg/l	4.0	3.0	114	1244	10/14/92	RJC
221715	Spike		mg/l		2.0 2.0	99	1244	10/14/92	RJC
221855	Spike		mg/l			88	1244	10/14/92	RJC
			3, .	Total	2.0 Tood	92	1244	10/14/92	RJC
	Blank	<.1	mg/l	TOTAL	nead				
	Blank	<.1	mg/t				1136	10/15/92	RJC
	Standard	1.0	mg/l	1.0			1136	10/15/92	RJC
	Standard	2.1	mg/l	2.0		100	1136	10/15/92	RJC
	Standard	5.2	mg/l	5.0		105	1136	10/15/92	RJC
	Standard	1.1	mg/l	1.0		104	1136	10/15/92	RJC
	Standard	1.8	mg/l	2.0		110	1136	10/15/92	RJC
	Standard	1.1	mg/t			111	1136	10/15/92	RJC
	Standard	.62	mg/l	1.0		110	1136	10/15/92	RJC
	Standard	1.0	mg/l	.60		103	1136	10/15/92	RJC
222319	Duplicate	ND	mg/l	1.0		100	1136	10/15/92	RJC
221715	Duplicate	5	mg/kg	ND ,		100	1136	10/15/92	RJC
221855	Duplicate	2	- •	4		122	1136	10/15/92	RJC
221864	Duplicate	5	mg/kg	2		100	1136	10/15/92	RJC
222319	Spike	•	mg/kg	4		122	1136	10/15/92	RJC
221855	Spike		mg/l		2.0	95	1136	10/15/92	RJC
221864	Spike		mg/l		2.0	90	1136	10/15/92	RJC
221715	Spike		mg/l		2.0	93	1136	10/15/92	RJC
			mg/l		5.0	89	1136	10/15/92	RJC
	Blank	<.01		Total	Zinc				NUC
	Blank	.02	mg/l				1244	10/14/92	RJC
	Standard	.21	mg/l	••			1244	10/14/92	RJC
	Standard	2.0	mg/l	.20		105	1244	10/14/92	RJC
	Standard	5.2	mg/l	2.0		100	1244	10/14/92	RJC
	Standard	1.8	mg/l	5.0		104	1244	10/14/92	RJC
	Standard	1.1	mg/l	2.0		111	1244	10/14/92	RJC
	Standard	5.3	mg/l	1.0		110	1244	10/14/92	RJC
	Standard		mg/l	5.0		106	1244	10/14/92	
22319	Duplicate	10	mg/l	10		100	1244	10/14/92	RJC
21715	Duplicate	.80	mg/l	.77		104	1244	10/14/92	RJC
21855	Duplicate	14	mg/kg	16		113	1244	10/14/92	RJC
22319	Spike	7.3	mg/kg	5.9		121	1244	10/14/92	RJC
21715	•		mg/l		2.0	95	1244		RJC
21855	Spike Spike		mg/l		2.0	93	1244	10/14/92	RJC
	30186		mg/l		2.0		1677	10/14/92	RJC

I certify that the results were generated using the above specified methods.

C.H. Whiteside, Ph.D., President

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APPENDIX J

ANALYTICAL RESULTS FROM SOIL SAMPLES FROM LANDFILL NO. 2



Analytical Chemistry • Utility Operations

11/05/92

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification:

LF2-05-SS1/SS2 5-8.6' Comp

Collected By: JPJ

Date & Time Taken:

10/02/92

Other Data: Tinker AFB, Job # 5735

Bottle Data: 1 -- Unpreserved Plastic/Glass (00)

PARAMETER			: 10/07/92		Client: A	RS1
Total Sonic Extraction	RESULTS 30->1	UNITS g->ml	ANALYZED 1550 10/13/92	EQL	METHOD EPA Method 3550	BY
Hydrocarbon Sonication Extract.	Completed		1400 10/08/92			DDM
Phenols	ND	mg/kg	1700 10/14/92	5	EPA Method 3550 *MOD	JT
Phenol Distillation	DISTILLED		1800 10/13/92	,	EPA Method 420.1	WMB
Total Arsenic	11	mg/kg	0938 11/05/92	1	EPA Method 420.1	CRH
Total Barium	790	mg/kg	0938 11/05/92	.1	EPA Method 6010	GDG
Total Cadmium	77	mg/kg	0938 11/05/92		EPA Method 6010	GDG
Total Chromium	73	mg/kg	0938 11/05/92	.1	EPA Method 6010	GDG
Total Mercury	.09	mg/kg	1330 10/15/92	.2	EPA Method 6010	GDG
Total Nickel	71	mg/kg	0938 11/05/92	.001	EPA Method 7470	Lli
Total Lead	1400	mg/kg		.6	EPA Method 6010	GDG
otal Zinc	1900	mg/kg	0938 11/05/92	1	EPA Method 6010	GDG
etals Digestion - 3050 FL	Digested 50/4	3/ 1.3	0938 11/05/92	.1	EPA Method 6010	GDG
etals Digestion - 7471	Digested 50/1		0830 10/26/92		EPA Method 3050 Fl	JHL
cenaphthene	ND	and the	1600 10/14/92		EPA Method 7471	BWP
cenaphthylene	ND		1341 11/03/92	330	EPA Method 8270	PM
crolein	ND		1341 11/03/92	330	EPA Method 8270	PM
	NU	ug/kg	1134 11/04/92	100	EPA Method 8240	PM



Analytical Chemistry • Utility Operations

222693 Continued

					Page 2	
PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	
Acrylonitrile	ND	ug/kg	1134 11/04/92	100	EPA Method 8240	BY PM
Aldrin	ND	ug/kg	1341 11/03/92	330	EPA Method 8270	
Anthracene	ND	ug/kg	1341 11/03/92			GO
Benzene	ND	-		330	EPA Method 8270	PM
Benzidine		ug/kg	1134 11/04/92	5.0	EPA Method 8240	PM
	ND	ug/kg	1341 11/03/92	330	EPA Method 8270	PM
Benzo(a)anthracene	ND	ug/kg	1341 11/03/92	330	EPA Method 8270	PM
Benzo(a)pyrene	ND	ug/kg	1341 11/03/92	330	EPA Method 8270	
Benzo(b)fluoranthene	ND	ug/kg	1341 11/03/92	330		PM
Benzo(ghi)perylene	ND	ug/kg			EPA Method 8270	PM
Benzo(k)fluoranthene	ND		1341 11/03/92	330	EPA Method 8270	PM
	ND	ug/kg	1341 11/03/92	330	EPA Method 8270	PM
Bis(2-chloroethyl)ether	ND	ug/kg	1341 11/03/92	330	EPA Method 8270	PM
Bis(2-chloroethoxy)methane	ND	ug/kg	1341 11/03/92	330	EPA Method 8270	PM
Bis(2-chloroisopropyl)ether	ND	ug/kg	1341 11/03/92	330	EPA Method 8270	
4-Bromophenyl phenyl ether	ND	ug/kg	1341 11/03/92	330		PM
Bis(2-ethylhexyl)phthalate	ND	ug/kg			EPA Method 8270	PM
romoform			1341 11/03/92	330	EPA Method 8270	PM
romomethane	ND	ug/kg	1134 11/04/92	5.0	EPA Method 8240	PM
	ND	ug/kg	1134 11/04/92	10	EPA Method 8240	PM
-Chlorophenyl phenyl ether	ND	ug/kg	1341 11/03/92	330	EPA Method 8270	PM
enzyl butyl phthalate	ND	ug/kg	1341 11/03/92	330	EPA Method 8270	
arbon Tetrachloride	ND	ug/kg	1134 11/04/92			PM
nlorobenzene	ND			5.0	EPA Method 8240	PM
loroethane		ug/kg	1134 11/04/92	5.0	EPA Method 8240	PM
	ND	ug/kg	1134 11/04/92	10	EPA Method 8240	PM
Chloroethylvinyl ether	ND	ug/kg	1134 11/04/92	10	EPA Method 8240	PM
loroform	ND	ug/kg	1134 11/04/92	5.0	EPA Method 8240	
						PM



Analytical Chemistry • Utility Operations

222693 Continued

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PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Chloromethane	ND	ug/kg	1134 11/04/92	10	EPA Method 8240	PM
2-Chloronaphthalene	ND	ug/kg	1341 11/03/92	330	EPA Method 8270	PM
Chrysene	ND	ug/kg	1341 11/03/92	330	EPA Method 8270	PM
Dibenzo(a,h)anthracene	ND	ug/kg	1341 11/03/92	330	EPA Method 8270	PM
Dibromochloromethane	ND	ug/kg	1134 11/04/92	5.0	EPA Method 8240	PN
1,3-Dichlorobenzene	ND	ug/kg	1341 11/03/92	330	EPA Method 8270	PM.
1,2-Dichlorobenzene	ND	ug/kg	1341 11/03/92	330	EPA Method 8270	PM
1,4-Dichlorobenzene	ND	ug/kg	1341 11/03/92	330	EPA Method 8270	PM
3,3'-Dichlorobenzidine	ND	ug/kg	1341 11/03/92	670	EPA Method 8270	PM
Bromodichloromethane	ND	ug/kg	1134 11/04/92	5.0	EPA Method 8240	PM
1,1-Dichloroethane	ND	ug/kg	1134 11/04/92	5.0	EPA Method 8240	PM
1,2-Dichloroethane	ND	ug/kg	1134 11/04/92	5.0	EPA Method 8240	PM
1,1-Dichloroethene	ND	ug/kg	1134 11/04/92	5.0	EPA Method 8240	PM
trans-1,2-Dichloroethene	ND	ug/kg	1134 11/04/92	5.0	EPA Method 8240	PM
Dichlorodiflouromethane	ND	ug/kg	1134 11/04/92	1.0	EPA Method 8240	PM
1,2-Dichloropropane	ND	ug/kg	1134 11/04/92	5.0	EPA Method 8240	PM
cis-1,3-Dichloropropene	ND	ug/kg	1134 11/04/92	5.0	EPA Method 8240	PM
Diethyl phthalate	ND	ug/kg	1341 11/03/92	330	EPA Method 8270	PM
Dimethyl phthalate	ND	ug/kg	1341 11/03/92	330	EPA Method 8270	PM
Di-n-butylphthalate	ND	ug/kg	1341 11/03/92	330	EPA Method 8270	PM
Di-n-octylphthalate	ND	ug/kg	1341 11/03/92	330	EPA Method 8270	PM
2,4-Dinitrotoluene	ND	ug/kg	1341 11/03/92	330	EPA Method 8270	PM
2,6-Dinitrotoluene	ND	ug/kg	. 1341 11/03/92	330	EPA Method 8270	PM
1,2-DPH (as azobenzene)	ND	ug/kg	1341 11/03/92	330	EPA Method 8270	PN



Analytical Chemistry • Utility Operations

222693 Continued

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PARAMETER	RESULTS	UNITS	ANALYZED	TOT		
Ethyl benzene	ND	ug/kg	1134 11/04/92	EQL	METHOD EPA Method 8240	BY
Fluoranthene	ND	ug/kg	1341 11/03/92	330		PM
Fluorene	ND	ug/kg			EPA Method 8270	PM
Hexachlorobenzene	ND		1341 11/03/92	330	EPA Method 8270	PM
Hexachlorobutadiene	ND	ug/kg	1341 11/03/92	330	EPA Method 8270	PM
	ND	ug/kg	1341 11/03/92	330	EPA Method 8270	PM
Hexachlorocyclopentadiene	ND	ug/kg	1341 11/03/92	330	EPA Method 8270	
Hexachloroethane	ND	ug/kg	1341 11/03/92	330		PM
Indeno(1,2,3-cd)pyrene	ND	ug/kg			EPA Method 8270	PM
Isophorone	ND		1341 11/03/92	330	EPA Method 8270	PM
Methylene Chloride	ND	ug/kg	1341 11/03/92	330	EPA Method 8270	PM
	ND	ug/kg	1134 11/04/92	5.0	EPA Method 8240	PM
Naphthalene	ND	ug/kg	1341 11/03/92	330	EPA Method 8270	DM
Nitrobenzene	ND	ug/kg	1341 11/03/92	330		PM
N-nitrosodimethylamine	ND	ug/kg			EPA Method 8270	PM
N-Nitrosodi-n-propylamine	ND		1341 11/03/92	330	EPA Method 8270	PM
N-nitrosodiphenylamine		ug/kg	1341 11/03/92	330	EPA Method 8270	PM
	ND	ug/kg	1341 11/03/92	330	EPA Method 8270	PM
Phenanthrene	ND	ug/kg	1341 11/03/92	330	EPA Method 8270	PM
Pyrene	ND	ug/kg	1341 11/03/92	330		
1,1,2,2-Tetrachloroethane	ND	ug/kg	1134 11/04/92		EPA Method 8270	PM
Tetrachloroethene	ND			5.0	EPA Method 8240	PM
Toluene		ug/kg	1134 11/04/92	5.0	EPA Method 8240	PM
	ND	ug/kg	1134 11/04/92	5.0	EPA Method 8240	PM
1,2,4-Trichlorobenzene	ND	ug/kg	1341 11/03/92	330	EPA Method 8270	PM
1,1,1-Trichloroethane	ND	ug/kg	1134 11/04/92	5.0		
1,1,2-Trichloroethane	ND	ug/kg			EPA Method 8240	PM
Trichloroethene	ND		1134 11/04/92	5.0	EPA Method 8240	PM
		ug/kg	1134 11/04/92	5.0	EPA Method 8240	PM



Analytical Chemistry • Utility Operations

11/05/92

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PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	- DV
Trichlorofluoromethane	ND -	ug/kg	1134 11/04/92	10	EPA Method 8240	BY PM
Vinyl Chloride	ND	ug/kg	1134 11/04/92	10	EPA Method 8240	PM
trans-1,3-Dichloropropene	ND	ug/kg	1134 11/04/92	5.0	EPA Method 8240	РМ
2-Methylnaphthalene	ND	ug/kg	1341 11/03/92	330	EPA Method 8270	
Xylenes	ND	ug/kg	1134 11/04/92	10	EPA Method 8240	ęм
Total Petroleum Hydrocarbons	160			10	EPA Method 8240	PM
, coar 50.15	100	mg/kg	1500 10/08/92	10	EPA Method 418.1	TEO

I certify that the results were generated using the above specified methods.

C.H. Whiteside, Ph.D., President



Analytical Chemistry • Utility Operations

11/05/92

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification: LF2-06-SS1/SS2 7.5-11.1 Comp

Collected By: JPJ

Date & Time Taken:

10/02/92

Other Data: Tinker AFB, Job # 5735

Bottle Data: 1 -- Unpreserved Plastic/Glass (00)

Lab Sample Number: 222691 Received: 10/07/92 Client: ARS1

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
2-Methylnaphthalene	ND	ug/kg	1000 11/03/92	330	EPA Method 8270	GO
Total Sonic Extraction	30->1	g->ml	1514 10/13/92		EPA Method 3550	GE
Hydrocarbon Sonication Extract.	Completed		1400 10/08/92		EPA Method 3550 *MOD	JT
Phenols	ND	mg/kg	1700 10/14/92	5	EPA Method 420.1	WMB
Phenol Distillation	DISTILLED		2030 10/09/92		EPA Method 420.1	WKC
Total Arsenic	ND	mg/kg	0938 11/05/92	1	EPA Method 6010	GDG
Total Barium	300	mg/kg	0938 11/05/92	.1	EPA Method 6010	GDG
Total Cadmium	13	mg/kg	0938 11/05/92	.1	EPA Method 6010	GDG
Total Chromium	2.2	mg/kg	0938 11/05/92	.2	EPA Method 6010	GDG
Total Mercury	.09	mg/kg	1330 10/15/92	.001	EPA Method 7470	LW
Total Nickel	71	mg/kg	0938 11/05/92	.6	EPA Method 6010	GDG
Total Lead	580	mg/kg	0938 11/05/92	1	EPA Method 6010	GDG
Total Zinc	1000	mg/kg	0938 11/05/92	.1	EPA Method 6010	GDG
Metals Digestion - 3050 Fl	Digested 50/4		0830 10/26/92		EPA Method 3050 FL	JHL
Metals Digestion - 7471	Digested 50/1		1600 10/14/92		EPA Method 7471	BWP
Acenaphthene	ND	ug/kg	1000 11/03/92	330	EPA Method 8270	GO
Acenaphthylene	ND	ug/kg	1000 11/03/92	330	EPA Method 8270	GO



Analytical Chemistry • Utility Operations

PAKAMETERD					Page 2	2
PARAMETER Acrolein	RESULTS	UNITS	ANALYZED	FOT		
	ND	ug/kg	0634 10/31/92			BY
Acrylonitrile	ND	ug/kg			EPA Method 8240	PM
Aldrin	ND		0634 10/31/92	, , ,	EPA Method 8240	PM
Anthracene		ug/kg	1000 11/03/92	330	EPA Method 8270	GO
	ND	ug/kg	1000 11/03/92	330	EPA Method 8270	
Benzene	ND	ug/kg	0634 10/31/92			- GO
Benzidine	ND	ua/ka		5.0	EPA Method 8240	PM
Benzo(a)anthracene		ug/kg	1000 11/03/92	330	EPA Method 8270	~ GO
	ND	ug/kg	1000 11/03/92	330	EPA Method 8270	GO
Benzo(a)pyrene	ND	ug/kg	1000 11/03/92	3 30		
Benzo(b)fluoranthene	ND	ug/kg	1000 11/03/92		EPA Method 8270	GO
Benzo(ghi)perylene	ND	_		330	EPA Method 8270	GO
Benzo(k)fluoranthene		ug/kg	1000 11/03/92	330	EPA Method 8270	GO
	ND	ug/kg	1000 11/03/92	330	EPA Method 8270	GO
Bis(2-chloroethyl)ether	ND	ug/kg	1000 11/03/92	330		
Bis(2-chloroethoxy)methane	ND	ug/kg	1000 11/03/92		EPA Method 8270	GO
Bis(2-chloroisopropyl)ether	ND	-		330	EPA Method 8270	GO
4-Bromophenyl phenyl ether		ug/kg	1000 11/03/92	330	EPA Method 8270	GO
	ND	ug/kg	1000 11/03/92	330	EPA Method 8270	
Bis(2-ethylhexyl)phthalate	ND	ug/kg	1000 11/03/92	330		GO
Bromoform	ND	ug/kg			EPA Method 8270	GŰ
Bromomethane	ND		0634 10/31/92	5.0	EPA Method 8240	PM
4-Chlorophenyl phenyl ether		ug/kg	0634 10/31/92	10	EPA Method 8240	PM
	ND	ug/kg	1000 11/03/92	330	EPA Method 8270	
Benzyl butyl phthalate	ND	ug/kg	1000 11/03/92	330		GO
Carbon Tetrachloride	ND	ug/kg	0634 10/31/92		EPA Method 8270	GO
Chlorobenzene	ND			5.0	EPA Method 8240	PM
Chloroethane		ug/kg	0634 10/31/92	5.0	EPA Method 8240	PM
2-Chloroethylvinyl ether	ND	ug/kg	0634 10/31/92	10	EPA Method 8240	PM
2 chloroethylvinyl ether	ND	ug/kg	0634 10/31/92			P.M.



Analytical Chemistry • Utility Operations

11/05/92

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PARAMETER	RESULTS	UNITS	ANALYZED	FOT	\\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	
Chloroform	ND	ug/kg	0634 10/31/92	EQL 5.0	METHOD	BY
Chloromethane	110			5.0	EPA Method 8240	PM
	ND	ug/kg	0634 10/31/92	10	EPA Method 8240	PM
2-Chloronaphthalene	ND	ug/kg	1000 11/03/92	770		
Chrysene			1000 11/03/92	330	EPA Method 8270	GO
	ND	ug/kg	1000 11/03/92	330	EPA Method 8270	GO
Dibenzo(a,h)anthracene	ND	ug/kg	1000 11/03/92	~~~		40
Dibromochloromethane		0 , 10	1000 11/03/92	330	EPA Method 8270	GO
o is smooth of othernane	ND	ug/kg	0634 10/31/92	5.0	EPA Method 8240	PM
1,3-Dichlorobenzene	ND	ug/kg	1000 44 107 100			rm
1,2-Dichlorobenzene		23/ 73	1000 11/03/92	330	EPA Method 8270	GO
1,2 Dichtoropenzene	ND	ug/kg	1000 11/03/92	330	EPA Method 8270	60
1,4-Dichlorobenzene	ND	ug/kg	1000 44 107 105		Service Service	GO
3,3'-Dichlorobenzidine		497 49	1000 11/03/92	330	EPA Method 8270	GO
3,3 -bichtoropenzidine	ND	ug/kg	1000 11/03/92	670	EPA Method 8270	
Bromodichloromethane	ND	ug/kg	0474		and macina azio	GO
1 1-Diables ()		ug/kg	0634 10/31/92	5.0	EPA Method 8240	PM
1,1-Dichloroethane	ND	ug/kg	0634 10/31/92	5.0	EPA Method 8240	.
1,2-Dichloroethane	ND	ug/kg	0/7/ 40.5		1.77 Nechod 6240	PM
1 1-Diahl		ug/kg	0634 10/31/92	5.0	EPA Method 8240	PM
1,1-Dichloroethene	ND	ug/kg	0634 10/31/92	5.0	EPA Method 8240	8 10
trans-1,2-Dichloroethene	ND	ua (ka	445.		I'M Meellod 0240	PM
Diebl		ug/kg	0634 10/31/92	5.0	EPA Method 8240	PM
Dichlorodiflouromethane	ND	ug/kg	0634 10/31/92	1.0	EPA Method 8240	
1,2-Dichloropropane	ND				EFA MECHOD 0240	PM
-i- 4 7 - 1		ug/kg	0634 10/31/92	5.0	EPA Method 8240	PM
cis-1,3-Dichloropropene	ND	ug/kg	0634 10/31/92	5.0	EDA Mothed 83/0	
Diethyl phthalate	ND				EPA Method 8240	PM
	ND .	ug/kg	1000 11/03/92	330	EPA Method 8270	GO
imethyl phthalate	ND	ug/kg	1000 11/03/92	330	EDA Marka I 0070	
i-n-butylphthalate	ND			330	EPA Method 8270	GO
	ND	ug/kg	1000 11/03/92	330	EPA Method 8270	GO
i-n-octylphthalate	ND	ug/kg	1000 11/03/92	330	FDA W. J. J. San-	
,4-Dinitrotoluene	ND			330	EPA Method 8270	GO
	NU	ug/kg	1000 11/03/92	330	EPA Method 8270	GO
,6-Dinitrotoluene	ND	ug/kg	1000 11/03/92	330	FD1 W 11 1	
			1,00,72	J J0	EPA Method 8270	GO



Analytical Chemistry • Utility Operations

11/05/92

222691 Continued

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	DV
1,2-DPH (as azobenzene)	ND	ug/kg	1000 11/03/92	330	EPA Method 8270	BY GO
Ethyl benzene	ND	ug/kg	0634 10/31/92	5.0	EPA Method 8240	
		5, 40	10,51,72	5.0	EPA Method 8240	PM
Fluoranthene	ND	ug/kg	1000 11/03/92	330	EPA Method 8270	GO
Fluorene	ND	ug/kg	1000 11/03/92	330	EPA Method 8270	ĞО
Hexach Lorobenzene	ND	ug/kg	1000 11/03/92	330	EPA Method 8270	GO
Hexachlorobutadiene	ND	ug/kg	1000 11/03/92	330	EPA Method 8270	น้ 0
Hexachlorocyclopentadiene	ND	ug/kg	1000 11/03/92	330	EPA Method 8270	GO
Hexachloroethane	ND	ug/kg	1000 11/03/92	330	EPA Method 8270	GO
Indeno(1,2,3-cd)pyrene	ND	ug/kg	1000 11/03/92	330	EPA Method 8270	GO
Isophorone	ND	ug/kg	1000 11/03/92	330	EPA Method 8270	GO
Methylene Chloride	ND	ug/kg	0634 10/31/92	5.0	EPA Method 8240	PM
Naphthalene	ND	ug/kg	1000 11/03/92	330	EPA Method 8270	GO
Nitrobenzene	ND	ug/kg	1000 11/03/92	330	EPA Method 8270	GO
N-nitrosodimethylamine	ND	ug/kg	1000 11/03/92	330	EPA Method 8270	GO
N-Nitrosodi-n-propylamine	ND	ug/kg	1000 11/03/92	330	EPA Method 8270	GO
N-nitrosodiphenylamine	ND	ug/kg	1000 11/03/92	330	EPA Method 8270	СÇ
Phenanthrene	ND	ug/kg	1000 11/03/92	330	EPA Method 8270	GO
Pyrene	ND	ug/kg	1000 11/03/92	330	EPA Method 8270	GŐ.
1,1,2,2-Tetrachloroethane	ND	ug/kg	0634 10/31/92	5.0	EPA Method 8240	PM
Tetrachloroethene	ND	ug/kg	0634 10/31/92	5.0	EPA Method 8240	PM
Toluene	53	ug/kg	0634 10/31/92	5.0	EPA Method 8240	PM
1,2,4-Trichlorobenzene	ND	ug/kg	1000 11/03/92	330	EPA Method 8270	GO
1,1,1-Trichloroethane	ND	ug/kg	0634 10/31/92	5.0	EPA Method 8240	PM
1,1,2-Trichloroethane	ND	ug/kg	0634 10/31/92	5.0	EPA Method 8240	PM
						. 13



Analytical Chemistry • Utility Operations

222691 Continued

Page 5

					- ugu J	
PARAMETER Irichloroethene	RESULTS	UNITS ug/kg	ANALYZED 0634 10/31/92	EQL 5.0	METHOD	ВУ
Trichlorofluoromethane	ND	ug/kg			EPA Method 8240	PM
Vinyl Chloride	ND	-	0634 10/31/92	10	EPA Method 8240	PM
trans-1,3-Dichloropropene		ug/kg	0634 10/31/92	10	EPA Method 8240	PM
Xylenes	ND	ug/kg	0634 10/31/92	5.0	EPA Method 8240	PM
	ND	ug/kg	0634 10/31/92	10	EPA Method 8240	PM
Total Petroleum Hydrocarbons	430	mg/kg	1500 10/08/92	10	EPA Method 418.1	TEO

I certify that the results were generated using the above specified methods.

C.H. Whiteside, Ph.D., President



Analytical Chemistry • Utility Operations

11/05/92

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification: LF2-07-SS1/SS2 8-11.6' Comp

Collected By:

JPJ

Date & Time Taken:

10/02/92

Other Data: Tinker AFB, Job # 5735

Bottle Data: 1 -- Unpreserved Plastic/Glass (00)

Lab Sample Number: 222689 Received: 10/07/92

Client: ARS1

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Total Sonic Extraction	30->1	g->ml	1535 10/13/92	- 1-	EPA Method 3550	DDM
Hydrocarbon Sonication Extract.	Completed		1400 10/08/92		EPA Method 3550 *MOD	JT
Phenols	ND	mg/kg	1700 10/14/92	5	EPA Method 420.1	WMB
Phenol Distillation	DISTILLED		2030 10/09/92		EPA Method 420.1	WKC
Total Arsenic	2.6	mg/kg	0938 11/05/92	1	EPA Method 6010	GDG
Total Barium	810	mg/kg	0938 11/05/92	.1	EPA Method 6010	GDG
Total Cadmium	16	mg/kg	0938 11/05/92	.1	EPA Method 6010	GDG
Total Chromium	31	mg/kg	0938 11/05/92	.2	EPA Method 6010	GDG
Total Mercury	.2	mg/kg	1330 10/15/92	.001	EPA Method 7470	LŴ
Total Nickel	34	mg/kg	0938 11/05/92	.6	EPA Method 6010	GDG
Total Lead	300	mg/kg	0938 11/05/92	1	EPA Method 6010	GDG
Total Zinc	280	mg/kg	0938 11/05/92	.1	EPA Method 6010	GDG
Metals Digestion - 3050 Fl	Digested 50/4		0830 10/26/92		EPA Method 3050 Fl	JHL
Metals Digestion - 7471	Digested 50/1		1600 10/14/92		EPA Method 7471	BWP
Acenaphthene	ND	ug/kg	1328 11/04/92	330	EPA Method 8270	PM
Acenaphthylene	ND	ug/kg	1328 11/04/92	330	EPA Method 8270	PM
Anthracene	ND	ug/kg	1328 11/04/92	330	EPA Method 8270	PM



Analytical Chemistry • Utility Operations

222689 Continued

ARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Benzidine	ND	ug/kg	1328 11/04/92	330	EPA Method 8270	PM
Benzo(a)anthracene	ND	ug/kg	1328 11/04/92	330	EPA Method 8270	PM
Benzo(a)pyrene	ND	ug/kg	1328 11/04/92	330	EPA Method 8270	PM
Benzo(b)fluoranthene	ND	ug/kg	1328 11/04/92	330	EPA Method 8270	PM
Benzo(ghi)perylene	ND	ug/kg	1328 11/04/92	330	EPA Method 8270	PM
Benzo(k)fluoranthene	ND	ug/kg	1328 11/04/92	330	EPA Method 8270	PM
Bis(2-chloroethyl)ether	ND	ug/kg	1328 11/04/92	330	EPA Method 8270	PM
Bis(2-chloroethoxy)methane	ND	ug/kg	1328 11/04/92	330	EPA Method 8270	PM
Bis(2-chloroisopropyl)ether	ND	ug/kg	1328 11/04/92	330	EPA Method 8270	РМ
4-Bromophenyl phenyl ether	ND	ug/kg	1328 11/04/92	330	EPA Method 8270	PM
Bis(2-ethylhexyl)phthalate	ND	ug/kg	1328 11/04/92	330	EPA Method 8270	PM
4-Chlorophenyl phenyl ether	ND	ug/kg	1328 11/04/92	330	EPA Method 8270	PM
Benzyl butyl phthalate	ND	ug/kg	1328 11/04/92	330	EPA Method 8270	PM
2-Chloronaphthalene	ND	ug/kg	1328 11/04/92	330	EPA Method 8270	PM
Chrysene	ND	ug/kg	1328 11/04/92	330	EPA Method 8270	PM
Dibenzo(a,h)anthracene	ND	ug/kg	1328 11/04/92	330	EPA Method 8270	PM
1,3-Dichlorobenzene	ND	ug/kg	1328 11/04/92	330	EPA Method 8270	PM
1,2-Dichlorobenzene	ND	ug/kg	1328 11/04/92	330	EPA Method 8270	PM
1,4-Dichlorobenzene	ND	ug/kg	1328 11/04/92	330	EPA Method 8270	PM
3,3'-Dichlorobenzidine	ND	ug/kg	1328 11/04/92	670	EPA Method 8270	PM
Diethyl phthalate	ND	ug/kg	1328 11/04/92	330	EPA Method 8270	PM
Dimethyl phthalate	ND	ug/kg	1328 11/04/92	330	EPA Method 8270	PM
)i-n-butylphthalate	ND	ug/kg	1328 11/04/92	330	EPA Method 8270	PM
Di-n-octylphthalate	ND	ug/kg	1328 11/04/92	330	EPA Method 8270	PM



Analytical Chemistry • Utility Operations

222689 Continued

				Page 3		
PARAMETER	RESULTS	UNITS	ANATURE			
2,4-Dinitrotoluene	ND	ug/kg	ANALYZED	EQL	METHOD	BY
2 (2)		-3/ 1/3	1328 11/04/92	330	EPA Method 8270	PM
2,6-Dinitrotoluene	ND	ug/kg	1328 11/04/92	330	FB.4	
1,2-DPH (as azobenzene)			1,72	220	EPA Method 8270	PM
, a star (do debenzene)	ND	ug/kg	1328 11/04/92	330	EPA Method 8270	
Fluoranthene	ND				and nechod 6270	PM
		ug/kg	1328 11/04/92	330	EPA Method 8270	PM
Fluorene	ND	ug/kg	1328 11/04/92			2
Hoyachland		-57 113	1320 11/04/92	330	EPA Method 8270	PM
Hexach Lorobenzene	ND	ug/kg	1328 11/04/92	330	EDA Mark I DOTO	
Hexachlorobutadiene				330	EPA Method 8270	Ρ̈́M
and the state of t	ND	ug/kg	1328 11/04/92	330	EPA Method 8270	Du
Hexachlorocyclopentadiene	ND				3270	PM
		ug/kg	1328 11/04/92	330	EPA Method 8270	PM
Hexachloroethane	ND	ug/kg	1328 11/04/92	770		
Indeno(1,2,3-cd)pyrene			1320 11/04/92	330	EPA Method 8270	PM
indeno(1,2,3-cd)pyrene	ND	ug/kg	1328 11/04/92	330	EPA Method 8270	
Isophorone	ND				LFA Method 8270	PM
	ND	ug/kg	1328 11/04/92	330	EPA Method 8270	PM
Naphthalene	ND	ug/kg	1700 44 44 44			F 14
Nichael		29/ 29	1328 11/04/92	330	EPA Method 8270	PM
Nitrobenzene	ND	ug/kg	1328 11/04/92	330	FB	
N-nitrosodimethylamine			== 11,04,72	220	EPA Method 8270	PM.
try tampie	ND	ug/kg	1328 11/04/92	330	EPA Method 8270	Du
N-Nitrosodi-n-propylamine	ND	tom the m				PM
		ug/kg	1328 11/04/92	330	EPA Method 8270	PM
N-nitrosodiphenylamine	ND	ug/kg	1328 11/04/92	770		
Phenanthrene			1323 11/04/92	330	EPA Method 8270	PM_
	ND	ug/kg	1328 11/04/92	330	EPA Method 8270	
Pyrene	ND				EFA MECHOG 6270	PM
	ND	ug/kg	1328 11/04/92	330	EPA Method 8270	₽M ■
1,2,4-Trichlorobenzene	ND	ug/kg	1770 44 45 4-5			1.11
2-Matheday Late		49/ 49	1328 11/04/92	330	EPA Method 8270	PM
2-Methylnaphthalene	ND	ug/kg	1328 11/04/92	730	FB. M	
Total Petroleum Hydrocarbons	770		11,04,72	330	EPA Method 8270	PM
	370	mg/kg	1500 10/08/92	10	EPA Method 418.1	TEO
						TEO

I certify that the results were generated using the above specified methods.



Analytical Chemistry • Utility Operations

11/05/92

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification: LF2-10-SS2 6-7.6'

Collected By:

JPJ

Date & Time Taken:

10/02/92

Other Data: Tinker AFB, Job # 5735

Bottle Data: 1 -- Unpreserved Plastic/Glass (00)

Lab Sample Number: 222688 Received: 10/07/92

Client: ARS1

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Total Sonic Extraction	30->1	g->ml	1525 10/13/92		EPA Method 3550	DDM
Hydrocarbon Sonication Extract.	Completed		1400 10/08/92		EPA Method 3550 *MOD	JT
Phenols	ND	mg/kg	1700 10/14/92	5	EPA Method 420.1	WMB
Phenol Distillation	DISTILLED		1730 10/09/92		EPA Method 420.1	WKC
Total Arsenic	ND	mg/kg	0938 11/05/92	1	EPA Method 6010	GDG
Total Barium	1200	mg/kg	0938 11/05/92	.1	EPA Method 6010	GDG
Total Cadmium	7.7	mg/kg	0938 11/05/92	.1	EPA Method 6010	GDG
Total Chromium	25	mg/kg	0938 11/05/92	.2	EPA Method 6010	GDG
Total Mercury	ND	mg/kg	1330 10/15/92	.001	EPA Method 7470	LW
Total Nickel	21	mg/kg	0938 11/05/92	.6	EPA Method 6010	GDG
Total Lead	72	mg/kg	0938 11/05/92	1	EPA Method 6010	GDG
Total Zinc	67	mg/kg	0938 11/05/92	.1	EPA Method 6010	GDG
Metals Digestion - 3050 Fl	Digested 50/4		0830 10/26/92		EPA Method 3050 Fl	JHL
Metals Digestion - 7471	Digested 50/1		1600 10/14/92		EPA Method 7471	BWP
Acenaphthene	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	PM
Acenaphthylene	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	PM
Acrolein	ND	ug/kg	1910 11/03/92	100	EPA Method 8240	PM



Analytical Chemistry • Utility Operations

222688 Continued

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Acrylonitrile	ND	ug/kg	1910 11/03/92	100	EPA Method 8240	PM
Anthracene	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	PM
Benzene	ND	ug/kg	1910 11/03/92	5.0	EPA Method 8240	PM
Benzidine	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	PM
Benzo(a)anthracene	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	PM
Benzo(a)pyrene	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	₽M
Benzo(b)fluoranthene	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	PM
Benzo(ghi)perylene	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	PM
Benzo(k)fluoranthene	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	PM
Bis(2-chloroethyl)ether	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	PM
Bis(2-chloroethoxy)methane	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	PM
Bis(2-chloroisopropyl)ether	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	PM
4-Bromophenyl phenyl ether	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	PM
Bis(2-ethylhexyl)phthalate	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	PM
Bromoform	ND	ug/kg	1910 11/03/92	5.0	EPA Method 8240	PM
Bromomethane	ND	ug/kg	1910 11/03/92	10	EPA Method 8240	PIÆ
4-Chlorophenyl phenyl ether	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	PM
Benzyl butyl phthalate	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	,a PM
Carbon Tetrachloride	ND	ug/kg	1910 11/03/92	5.0	EPA Method 8240	PM
Chlorobenzene	ND	ug/kg	1910 11/03/92	5.0	EPA Method 8240	PM
Chloroethane	ND	ug/kg	1910 11/03/92	10	EPA Method 8240	PM
2-Chloroethylvinyl ether	ND	ug/kg	1910 11/03/92	10	EPA Method 8240	PM
Chloroform	ND	ug/kg	1910 11/03/92	5.0	EPA Method 8240	PM
Chloromethane	ND	ug/kg	1910 11/03/92	10	EPA Method 8240	PM



Analytical Chemistry • Utility Operations

11/05/92

222688 Continued

					Page 3	
PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	
2-Chloronaphthalene	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	BY
Chrysene	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	PM
Dibenzo(a,h)anthracene	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	
Dibromochloromethane	ND	ug/kg	1910 11/03/92	5.0	EPA Method 8240	PM
1,3-Dichlorobenzene	ND	ug/kg	1337 11/05/92	330		PM
1,2-Dichlorobenzene	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	PM
1,4-Dichlorobenzene	ND	ug/kg	1337 11/05/92		EPA Method 8270	PM
3,3'-Dichlorobenzidine	ND		1337 11703742	330	EPA Method 8270	PM
	ND	ug/kg .	1337 11/05/92	670	EPA Method 8270	PM
Bromodichloromethane	ND	ug/kg	1910 11/03/92	5.0	EPA Method 8240	PM
1,1-Dichloroethane	ND	ug/kg	1910 11/03/92	5.0	EPA Method 8240	PM
1,2-Dichloroethane	ND	ug/kg	1910 11/03/92	5.0	EPA Method 8240	PM
1,1-Dichloroethene	ND	ug/kg	1910 11/03/92	5.0	EPA Method 8240	PM
trans-1,2-Dichloroethene	ND	ug/kg	1910 11/03/92	5.0	EPA Method 8240	PM
Dichlorodiflouromethane	ND	ug/kg	1910 11/03/92	1.0	EPA Method 8240	
1,2-Dichloropropane	ND	ug/kg	1910 11/03/92	5.0	EPA Method 8240	PM
cis-1,3-Dichloropropene	ND	ug/kg	1910 11/03/92	5.0		PM
Diethyl phthalate	ND			٥.٠	EPA Method 8240	PM
	NO	ug/kg	1337 11/05/92	330	EPA Method 8270	PM
Dimethyl phthalate	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	PM
)i-n-butylphthalate	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	PM
Di-n-octylphthalate	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	PM
2,4-Dinitrotoluene	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	PM
,6-Dinitrotoluene	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	
,2-DPH (as azobenzene)	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	PM
thyl benzene	ND	ug/kg				PM
		da\ kā	1910 11/03/92	5.0	EPA Method 8240	PM



Analytical Chemistry • Utility Operations

11/05/92

222688 Continued

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Fluoranthene	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	PM
Fluorene	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	PM
Hexachlorobenzene	ND	ug/kg	1337 11/05/92	33 0	EPA Method 8270	PM
Hexachlorobutadiene	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	P₩
Hexachlorocyclopentadiene	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	PM
Hexachloroethane	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	PM
Indeno(1,2,3-cd)pyrene	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	PM
Isophorone	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	PM
Methylene Chloride	ND	ug/kg	1910 11/03/92	5.0	EPA Method 8240	PM
Naphthalene	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	PM
Nitrobenzene	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	PM
N-nitrosodimethylamine	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	PM
N-Nitrosodi-n-propylamine	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	₽M
N-nitrosodiphenylamine	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	PM
Phenanthrene	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	PM
Pyrene	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	PM [®]
1,1,2,2-Tetrachloroethane	ND	ug/kg	1910 11/03/92	5.0	EPA Method 8240	PM
Tetrachloroethene	ND	ug/kg	1910 11/03/92	5.0	EPA Method 8240	PM
Toluene	ND	ug/kg	1910 11/03/92	5.0	EPA Method 8240	PM
1,2,4-Trichlorobenzene	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	PM
1,1,1-Trichloroethane	ND	ug/kg	1910 11/03/92	5.0	EPA Method 8240	PM
1,1,2-Trichloroethane	ND	ug/kg	1910 11/03/92	5.0	EPA Method 8240	PH
Trichloroethene	ND	ug/kg	1910 11/03/92	5.0	EPA Method 8240	PM
Trichlorofluoromethane	ND	ug/kg	1910 11/03/92	10	EPA Method 8240	PM



Analytical Chemistry • Utility Operations

222688 Continued

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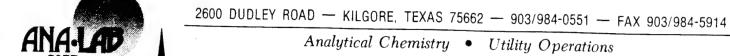
				3	
RESULTS	UNITS ug/kg	ANALYZED 1910 11/03/92	EQL 10	METHOD EPA Method 8240	BY PM
ND	ug/kg	1910 11/03/92	5.0	EPA Method 8240	PM
ND	ug/kg	1337 11/05/92	330	EPA Method 8270	PM
ND	ug/kg	1910 11/03/92	10	EPA Method 8240	PM
140	mg/kg	1500 10/08/92	10	EPA Method 418.1	TEO
	ND ND ND ND	ND ug/kg ND ug/kg ND ug/kg ND ug/kg	ND ug/kg 1910 11/03/92 ND ug/kg 1910 11/03/92 ND ug/kg 1337 11/05/92 ND ug/kg 1910 11/03/92	ND	ND ug/kg 1910 11/03/92 10 EPA Method 8240 ND ug/kg 1910 11/03/92 5.0 EPA Method 8240 ND ug/kg 1337 11/05/92 330 EPA Method 8270 ND ug/kg 1910 11/03/92 10 EPA Method 8240 140 mg/kg 1500 10/03/92

I certify that the results were generated using the above specified methods.

C.H. Whiteside, Ph.D., President

APPENDIX K

ANALYTICAL RESULTS FROM WATER SAMPLES FROM LANDFILL NO. 2



11/05/92

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification:

Collected By: Date & Time Taken:

10/06/92

Other Data: AFSCAPS Tinker AFB Job #5735

Bottle Data: 2 -- 40 ml Glass Vial (Zero Headspace) with a Teflon Lined Lid (04) Lab Sample Number: 222872 Received: 10/09/92

Client: ARS1

PARAMETER	RESULTS	UNITS	ANATUGES			
Xylenes	ND	ug/l	ANALYZED 1042 10/29/92	EQL	METHOD	BY
Annalata		43/ (1042 10/29/92	5.0	EPA Method 8240	GO
Acrolein	ND	ug/l	1042 10/29/92	100	EPA Method 8240	GO
Acrylonitrile	ND	ug/l	1042 10/29/92	100	EPA Method 8240	GO
Benzene	168	ug/l	1042 10/29/92	5.0	EPA Method 8240	GO
Bromoform	ND	ug/l	1042 10/29/92	5.0	EPA Method 8240	GO
Bromomethane	ND	ug/l	1042 10/29/92	10	EPA Method 8240	GO
Carbon Tetrachloride	ND	ug/l	1042 10/29/92	5.0	EPA Method 8240	GO
Chlorobenzene	ND	ug/l	1042 10/29/92	5.0	EPA Method 8240	GO
Chloroethane	ND	ug/l	1042 10/29/92	10	EPA Method 8240	GQ
2-Chloroethylvinyl ether	ND	ug/l	1042 10/29/92	10	EPA Method 8240	GO
Chloroform	ND	ug/l	1042 10/29/92	5.0	EPA Method 8240	GO
Chloromethane	ND	ug/l	1042 10/29/92	10	EPA Method 8240	GO
Dibromochloromethane	ND	ug/l	1042 10/29/92	5.0	EPA Method 8240	GO
Bromodichloromethane	ND	ug/l	1042 10/29/92	5.0	EPA Method 8240	GO
1,1-Dichloroethane	ND	ug/l	1042 10/29/92	5.0	EPA Method 8240	GO
1,2-Dichloroethane	ND	ug/l	1042 10/29/92	5.0	EPA Method 8240	GO
,1-Dichloroethene	ND	ug/l	1042 10/29/92	5.0	EPA Method 8240	GO



Analytical Chemistry • Utility Operations

11/05/92

222872 Continued

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PARAMETER	RESULTS	UNITS	ANALYZED			
trans-1,2-Dichloroethene	ND	ug/l	1042 10/29/92	EQL	METHOD	BY
Dichlorodiflouromethane			1042 10/29/92	5.0	EPA Method 8240	GO
Dicition od Filouromethane	ND	ug/l	1042 10/29/92	1.0	EPA Method 8240	GO
1,2-Dichloropropane	ND	ug/l	40/0 40		22.0	GO
		dg/ t	1042 10/29/92	5.0	EPA Method 8240	GO
cis-1,3-Dichloropropene	ND	ug/l	1042 10/29/92	5.0	EPA Method 8240	GO
Ethyl benzene	ND	. m 41	**		200	GO
		ug/l	1042 10/29/92	5.0	EPA Method 8240	GO
Methylene Chloride	ND	ug/l	1042 10/29/92	5.0	EPA Method 8240	
1,1,2,2-Tetrachloroethane	ND				LFA Method 8240	GO
	NO	ug/l	1042 10/29/92	5.0	EPA Method 8240	GO
Tetrachloroethene	ND	ug/l	1042 10/29/92	5.0	EPA Method 8240	
Toluene	27			2.0	EFA Method 8240	GO
	21	ug/l	1042 10/29/92	5.0	EPA Method 8240	GO
1,1,1-Trichloroethane	ND	ug/l	1042 10/29/92	5.0	EDA Marka di 00/0	
,1,2-Trichloroethane	ND			3.0	EPA Method 8240	GO
	ND	ug/l	1042 10/29/92	5.0	EPA Method 8240	GO
richloroethene	ND	ug/l	1042 10/29/92	5.0		
richlorofluoromethane			10,2,7,72	5.0	EPA Method 8240	GO
	ND	ug/l	1042 10/29/92	10	EPA Method 8240	GO
inyl Chloride	ND	ug/l	1042 10/29/92	10	FD4	
rans-1,3-Dichloropropene	ND.		10/2//72	10	EPA Method 8240	GO
, a contain opi opene	ND ·	ug/l	1042 10/29/92	5.0	EPA Method 8240	GO

I certify that the results were generated using the above specified methods.



Analytical Chemistry • Utility Operations

11/05/92

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification:

LF2-PZB LZ-11-6

Collected By:

10/06/92

Date & Time Taken:

Other Data: AFSCAPS Tinker AFB Job #5735

Bottle Data: 2 -- 40 ml Glass Vial (Zero Headspace) with a Teflon Lined Lid (04)

PARAMETER			ed: 10/09/92		Client:	ARS1
Acrolein	RESULTS	UNITS	ANALYZED	EQL	METHOD	
	ND	ug/l	0934 10/29/92	100	EPA Method 8240	B
Acrylonitrile	ND	ug/l	0934 10/29/92			GC
Benzene	ND.		0/34 10/29/92	100	EPA Method 8240	GO
	ND	ug/l	0934 10/29/92	5.0	EPA Method 8240	GO
Bromoform	ND	ug/l	0934 10/29/92	5.0	EPA Method 8240	GO
Bromomethane	ND	ug/l	0934 10/29/92	10	EPA Method 8240	
Carbon Tetrachloride	ND	ug/l	0934 10/29/92	5.0	EPA Method 8240	GO
Chlorobenzene	ND	ug/l	0934 10/29/92	5.0		GO
Chloroethane	ND	ug/l	0934 10/29/92		EPA Method 8240	GO
2-Chloroethylvinyl ether	ND			10	EPA Method 8240	GO
Chloroform		ug/l	0934 10/29/92	10	EPA Method 8240	GO
	ND	ug/l	0934 10/29/92	5.0	EPA Method 8240	GO
hloromethane	ND	ug/l	0934 10/29/92	10	EPA Method 8240	GO
ibromochloromethane	ND	ug/l	0934 10/29/92	5.0	EPA Method 8240	
romodichloromethane	ND	ug/(0934 10/29/92			GO
1-Dichloroethane	ND			5.0	EPA Method 8240	GO
2-Dichloroethane		ug/l	0934 10/29/92	5.0	EPA Method 8240	GO
	ND	ug/l	0934 10/29/92	5.0	EPA Method 8240	GO
1-Dichloroethene	ND	ug/l	0934 10/29/92	5.0	EPA Method 8240	GO
ans-1,2-Dichloroethene	ND	ug/l	0934 10/29/92	5.0	EPA Method 8240	GO



Analytical Chemistry • Utility Operations

11/05/92

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PARAMETER	RESULTS	UNITS	ANALYZED	POT	VERWOOD	
Dichlorodiflouromethane	ND	ug/l	0934 10/29/92	EQL 1.0	METHOD EPA Method 8240	BY GO
1,2-Dichloropropane	ND	ug/l	0934 10/29/92	5.0	EPA Method 8240	GO
cis-1,3-Dichloropropene	ND	ug/l	0934 10/29/92	5.0	EPA Method 8240	GO
Ethyl benzene	ND	ug/l	0934 10/29/92	5.0	EPA Method 8240	GO
Methylene Chloride	ND	ug/l	0934 10/29/92	5.0	EPA Method 8240	GO
1,1,2,2-Tetrachloroethane	ND	ug/l	0934 10/29/92	5.0	EPA Method 8240	GO
Tetrachloroethene	ND	ug/l	0934 10/29/92	5.0	EPA Method 8240	GO
Toluene	ND	ug/l	0934 10/29/92	5.0	EPA Method 8240	GO
1,1,1-Trichloroethane	ND	ug/l	0934 10/29/92	5.0	EPA Method 8240	GO
1,1,2-Trichloroethane	ND	ug/l	0934 10/29/92	5.0	EPA Method 8240	GO
Trichloroethene	ND	ug/l	0934 10/29/92	5.0	EPA Method 8240	GO
Trichlorofluoromethane	ND	ug/l	0934 10/29/92	10	EPA Method 8240	GO
Vinyl Chloride	ND	ug/l	0934 10/29/92	10	EPA Method 8240	GO
trans-1,3-Dichloropropene	ND	ug/l	0934 10/29/92	5.0	EPA Method 8240	GO
Xylenes	ND	ug/l	0934 10/29/92	10	EPA Method 8240	GO

I certify that the results were generated using the above specified methods.

C.H. Whiteside, Ph.D., President



Analytical Chemistry • Utility Operations

11/05/92

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification:

LF2-PZC LZ-11-9

Collected By: JPJ

Date & Time Taken:

10/06/92

Other Data: AFSCAPS Tinker AFB Job #5735

Bottle Data: 2 -- 40 ml Glass Vial (Zero Headspace) with a Teflon Lined Lid (04)

Lab Sample Number: 222868 Received: 10/09/92

Client: ARS1

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Xylenes	ND	ug/l	2027 10/29/92	5.0	EPA Method 8240	GO
Acrolein	ND	ug/l	2027 10/29/92	100	EPA Method 8240	GO
Acrylonitrile	ND	ug/l	2027 10/29/92	100	EPA Method 8240	GO
Benzene	ND	ug/l	2027 10/29/92	5.0	EPA Method 8240	GO
Bromoform	ND	ug/l	2027 10/29/92	5.0	EPA Method 8240	GO
Bromomethane	ND	ug/l	2027 10/29/92	10	EPA Method 8240	GO
Carbon Tetrachloride	ND	ug/l	2027 10/29/92	5.0	EPA Method 8240	GO
Chlorobenzene	ND	ug/l	2027 10/29/92	5.0	EPA Method 8240	GO
Chloroethane	ND	ug/l	2027 10/29/92	10	EPA Method 8240	ලෙ
2-Chloroethylvinyl ether	ND	ug/l	2027 10/29/92	10	EPA Method 8240	GO
Chloroform	ND	ug/l	2027 10/29/92	5.0	EPA Method 8240	GO
Chloromethane	ND	ug/l	2027 10/29/92	10	EPA Method 8240	GO
Dibromochloromethane	ND	ug/l	2027 10/29/92	5.0	EPA Method 8240	GO
Bromodichloromethane	ND	ug/l	2027 10/29/92	5.0	EPA Method 8240	GO
1,1-Dichloroethane	ND	ug/l	2027 10/29/92	5.0	EPA Method 8240	GO
1,2-Dichloroethane	ND	ug/l	2027 10/29/92	5.0	EPA Method 8240	GO
1,1-Dichloroethene	ND	ug/l	2027 10/29/92	5.0	EPA Method 8240	GO



Analytical Chemistry • Utility Operations

11/05/92 222868 Continued

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PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
trans-1,2-Dichloroethene	ND	ug/l	2027 10/29/92	5.0	EPA Method 8240	GO
Dichlorodiflouromethane	ND	ug/l	2027 10/29/92	1.0	EPA Method 8240	GO
1,2-Dichloropropane	ND	ug/l	2027 10/29/92	5.0	EPA Method 8240	GO
cis-1,3-Dichloropropene	ND	ug/l	2027 10/29/92	5.0	EPA Method 8240	GO
Ethyl benzene	ND	ug/l	2027 10/29/92	5.0	EPA Method 8240	GO
Methylene Chloride	ND	ug/l	2027 10/29/92	5.0	EPA Method 8240	GO
1,1,2,2-Tetrachloroethane	ND	ug/l	2027 10/29/92	5.0	EPA Method 8240	GO
Tetrachloroethene	ND	ug/l	2027 10/29/92	5.0	EPA Method 8240	GO
Toluene	ND	ug/l	2027 10/29/92	5.0	EPA Method 8240	GO
1,1,1-Trichloroethane	ND	ug/l	2027 10/29/92	5.0	EPA Method 8240	GO
1,1,2-Trichloroethane	ND	ug/l	2027 10/29/92	5.0	EPA Method 8240	GO
Trichloroethene	ND	ug/l	2027 10/29/92	5.0	EPA Method 8240	GO
Trichlorofluoromethane	ND	ug/l	2027 10/29/92	10	EPA Method 8240	GO
Vinyl Chloride	ND	ug/l	2027 10/29/92	10	EPA Method 8240	GO
trans-1,3-Dichloropropene	ND	ug/l	2027 10/29/92	5.0	EPA Method 8240	GO

I certify that the results were generated using the above specified methods.

C.H. Whiteside. Ph.D. President



Analytical Chemistry • Utility Operations

11/05/92

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification:

LF2-PZD

12-11-12

Client: ARS1

Collected By:

Date & Time Taken:

10/06/92

Other Data: AFSCAPS Tinker AFB Job #5735

Bottle Data: 2 -- 40 ml Glass Vial (Zero Headspace) with a Teflon Lined Lid (04)

Lab Sample Number: 222869 **Received:** 10/09/92

PARAMETER RESULTS UNITS ANALYZED EQL METHOD BY Acrolein ND 0901 10/29/92 100 ug/l EPA Method 8240 Acrylonitrile ND ug/l 0901 10/29/92 100 EPA Method 8240 GO Benzene ND ug/l 0901 10/29/92 5.0 EPA Method 8240 GO Bromoform ND ug/l 0901 10/29/92 5.0 EPA Method 8240 Bromomethane ND ug/l 0901 10/29/92 10 EPA Method 8240 Carbon Tetrachloride ND ug/l 0901 10/29/92 5.0 EPA Method 8240 GO Chlorobenzene ND ug/l 0901 10/29/92 5.0 EPA Method 8240 GO Chloroethane ND 0901 10/29/92 EPA Method 8240 ug/l GO 2-Chloroethylvinyl ether ug/l 0901 10/29/92 10 EPA Method 8240 GΩ Chloroform ND ug/l 0901 10/29/92 5.0 EPA Method 8240 GO Chloromethane ND ug/l 0901 10/29/92 10 EPA Method 8240 GO Dibromochloromethane ND ug/l 0901 10/29/92 5.0 EPA Method 8240 GO Bromodichloromethane ND 0901 10/29/92 5.0 EPA Method 8240 ug/l GO 1,1-Dichloroethane ND ug/l 0901 10/29/92 5.0 EPA Method 8240 GO 1,2-Dichloroethane ND ug/l 0901 10/29/92 5.0 EPA Method 8240 GO 1,1-Dichloroethene ND ug/l 0901 10/29/92 EPA Method 8240 5.0 60 trans-1,2-Dichloroethene ND ug/l 0901 10/29/92 5.0 EPA Method 8240 GO



Analytical Chemistry • Utility Operations

222869 Continued

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					Page 2	
PARAMETER	RESULTS	UNITS	ANALYZED	707		
Dichlorodiflouromethane	ND	ug/l		EQL	METHOD	BY
		ug/ t	0901 10/29/92	1.0	EPA Method 8240	GO
1,2-Dichloropropane	ND	ug/l	0901 10/29/92	5.0	EPA Method 8240	GO
cis-1,3-Dichloropropene	ND	ug/l	0901 10/29/92	5.0	EPA Method 8240	GO
Ethyl benzene	ND	ug/l	0901 10/29/92	5.0	EPA Method 8240	
Methylene Chloride	ND	ug/l	0901 10/29/92	5.0	EPA Method 8240	GO
1,1,2,2-Tetrachloroethane	ND	ug/l	0901 10/29/92	5.0	EPA Method 8240	GO
Tetrachloroethene	ND	ug/l	0901 10/29/92	5.0		GO
Toluene	ND	ug/l	0901 10/29/92		EPA Method 8240	GO
1 1 1 7 2 1 1		3. ·	0701 10/29/92	5.0	EPA Method 8240	GO
1,1,1-Trichloroethane	ND	ug/l	0901 10/29/92	5.0	EPA Method 8240	GO
1,1,2-Trichloroethane	ND	ug/l	0901 10/29/92	5.0	EPA Method 8240	GO
Trichloroethene	ND	ug/l	0901 10/29/92	5.0	EPA Method 8240	GO
Trichlorofluoromethane	ND	ug/l	0901 10/29/92	10	EPA Method 8240	GO
Vinyl Chloride	ND	ug/l	0901 10/29/92	10	EPA Method 8240	
trans-1,3-Dichloropropene	ND	ug/l	0901 10/29/92	5.0		GO
(ylenes			,=,,,,,	٥.٠	EPA Method 8240	GO
,, , , , , , , , , , , , , , , , , , , ,	ND	ug/l	0901 10/29/92	10	EPA Method 8240	GO

I certify that the results were generated using the above specified methods.

C.H. Whiteside, Ph.D. President



Analytical Chemistry • Utility Operations

11/05/92

Client: ARS1

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification:

LF2-PZE LZ-11-8

Collected By:

Date & Time Taken:

10/06/92

Other Data: AFSCAPS Tinker AFB Job #5735

Bottle Data: 2 -- 40 ml Glass Vial (Zero Headspace) with a Teflon Lined Lid (04)

Lab Sample Number: 222871 Received: 10/09/92

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Xylenes	ND	ug/l	1008 10/29/92	5.0	EPA Method 8240	GO
Acrolein	ND	ug/l	1008 10/29/92	100	EPA Method 8240	GO
Acrylonitrile	ND	ug/l	1008 10/29/92	100	EPA Method 8240	GO
Benzene	ND	ug/l	1008 10/29/92	5.0	EPA Method 8240	GO
Bromoform	ND	ug/l	1008 10/29/92	5.0	EPA Method 8240	GO
Bromomethane	ND	ug/l	1008 10/29/92	10	EPA Method 8240	GO
Carbon Tetrachloride	ND	ug/l	1008 10/29/92	5.0	EPA Method 8240	GO
Chlorobenzene	ND	ug/l	1008 10/29/92	5.0	EPA Method 8240	GO
Chloroethane	ND	ug/l	1008 10/29/92	10	EPA Method 8240	GG
2-Chloroethylvinyl ether	ND	ug/l	1008 10/29/92	10	EPA Method 8240	GO
Chloroform	ND	ug/l	1008 10/29/92	5.0	EPA Method 8240	GO
Chloromethane	ND	ug/l	1008 10/29/92	10	EPA Method 8240	GO
Dibromochloromethane	ND	ug/l	1008 10/29/92	5.0	EPA Method 8240	GO
Bromodichloromethane	ND	ug/l	1008 10/29/92	5.0	EPA Method 8240	GO
1,1-Dichloroethane	ND	ug/l	1008 10/29/92	5.0	EPA Method 8240	GO
1,2-Dichloroethane	ND	ug/l	1008 10/29/92	5.0	EPA Method 8240	GO
1,1-Dichloroethene	ND	ug/l	1008 10/29/92	5.0	EPA Method 8240	GO



Analytical Chemistry • Utility Operations

11/05/92

222871 Continued

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	22227 77.0	TINTE	ANAT VEED	POT	METHOD	BY
PARAMETER	RESULTS	UNITS	ANALYZED 1008 10/29/92	EQL 5.0	EPA Method 8240	GO
trans-1,2-Dichloroethene	ND	ug/l	1008 10/29/92	5.0	EFA MELITOR SEAS	40
Dichlorodiflouromethane	ND	ug/l	1008 10/29/92	1.0	EPA Method 8240	GO
1,2-Dichloropropane	ND	ug/l	1008 10/29/92	5.0	EPA Method 8240	GO
cis-1,3-Dichloropropene	ND	ug/l	1008 10/29/92	5.0	EPA Method 8240	GO
Ethyl benzene	ND	ug/l	1008 10/29/92	5.0	EPA Method 8240	GO
Methylene Chloride	ND	ug/l	1008 10/29/92	5.0	EPA Method 8240	GO
1,1,2,2-Tetrachloroethane	ND	ug/l	1008 10/29/92	5.0	EPA Method 8240	GO
Tetrachloroethene	ND	ug/l	1008 10/29/92	5.0	EPA Method 8240	GO
Toluene	ND	ug/l	1008 10/29/92	5.0	EPA Method 8240	GO
1,1,1-Trichloroethane	ND	ug/l	1008 10/29/92	5.0	EPA Method 8240	GO
1,1,2-Trichloroethane	ND	ug/l	1008 10/29/92	5.0	EPA Method 8240	GO
Trichloroethene	ND	ug/l	1008 10/29/92	5.0	EPA Method 8240	GO
Trichlorofluoromethane	ND	ug/l	1008 10/29/92	10	EPA Method 8240	GO
Vinyl Chloride	ND	ug/l	1008 10/29/92	10	EPA Method 8240	GO
trans-1,3-Dichloropropene	ND	ug/l	1008 10/29/92	5.0	EPA Method 8240	GO

I certify that the results were generated using the above specified methods.

C.H. Whiteside, Ph.D., President

APPENDIX L

ANALYTICAL RESULTS FROM SOIL SAMPLES FROM LANDFILL NO. 4



Analytical Chemistry • Utility Operations

11/05/92

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification: LF4-05-SS1 3'-4.6'

Collected By: JPJ

Date & Time Taken:

10/01/92

Other Data: AFSCAPS Tinker AFB Job #5735

Bottle Data: 1 -- Unpreserved Plastic/Glass (00)

Lab Sample Number: 222860 Received: 10/09/92 Client: ARS1

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Total Sonic Extraction	30->8	g->ml	1350 10/21/92		EPA Method 3550	DDM
Hydrocarbon Sonication Extract.	Completed		1700 10/12/92		EPA Method 3550 *MOD	TEO
Phenols	ND	mg/kg	1650 10/15/92	5	EPA Method 420.1	WMB
Phenol Distillation	DISTILLED		1800 10/13/92		EPA Method 420.1	CRH
Total Arsenic	72	mg/kg	0938 11/05/92	1	EPA Method 6010	GDG
Total Barium	360	mg/kg	0938 11/05/92	.1	EPA Method 6010	GDG
Total Cadmium	47	mg/kg	0938 11/05/92	.1	EPA Method 6010	GDG
Total Chromium	57	mg/kg	0938 11/05/92	.2	EPA Method 6010	GDG
Total Mercury	.2	mg/kg	1330 10/15/92	.001	EPA Method 7470	L₩
Total Nickel	42	mg/kg	0938 11/05/92	.6	EPA Method 6010	GDG
Total Lead	1400	mg/kg	0938 11/05/92	1	EPA Method 6010	GDG
Total Zinc	310	mg/kg	0938 11/05/92	.1	EPA Method 6010	GDG
Metals Digestion - 3050 Fl	Digested 50/4		0830 10/26/92		EPA Method 3050 Fl	JHL
Metals Digestion - 7471	Digested 50/1		1600 10/14/92		EPA Method 7471	BWP
Acenaphthene	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
Acenaphthylene	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
Acrolein	ND	ug/kg	2017 11/03/92	100	EPA Method 8240	PM



Analytical Chemistry • Utility Operations

222860 Continued

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Acrylonitrile	ND	ug/kg	2017 11/03/92	100	EPA Method 8240	PM
Anthracene	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
Benzene	ND	ug/kg	2017 11/03/92	5.0	EPA Method 8240	PM
Benzidine	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
Benzo(a)anthracene	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
Benzo(a)pyrene	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
Benzo(b)fluoranthene	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
Benzo(ghi)perylene	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
Benzo(k)fluoranthene	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
Bis(2-chloroethyl)ether	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
is(2-chloroethoxy)methane	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
is(2-chloroisopropyl)ether	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
-Bromophenyl phenyl ether	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
is(2-ethylhexyl)phthalate	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
Bromoform	ND	ug/kg	2017 11/03/92	5.0	EPA Method 8240	PM
romomethane	ND	ug/kg	2017 11/03/92	10	EPA Method 8240	PM
-Chlorophenyl phenyl ether	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
Benzyl butyl phthalate	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
Carbon Tetrachloride	ND	ug/kg	2017 11/03/92	5.0	EPA Method 8240	PM
Chlorobenzene	ND	ug/kg	2017 11/03/92	5.0	EPA Method 8240	PM
Chloroethane	ND	ug/kg	2017 11/03/92	10	EPA Method 8240	PM
2-Chloroethylvinyl ether	ND	ug/kg	2017 11/03/92	10	EPA Method 8240	PM
Chloroform	ND	ug/kg	2017 11/03/92	5.0	EPA Method 8240	PM
Chloromethane	ND	ug/kg	2017 11/03/92	10	EPA Method 8240	PM



Analytical Chemistry • Utility Operations

222860 Continued

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
2-Chloronaphthalene	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
Chrysene	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
Dibenzo(a,h)anthracene	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
Dibromochloromethane	ND	ug/kg	2017 11/03/92	5.0	EPA Method 8240	₽M
1,3-Dichlorobenzene	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
1,2-Dichlorobenzene	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
1,4-Dichlorobenzene	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
3,3'-Dichlorobenzidine	ND	ug/kg	1431 11/04/92	5300	EPA Method 8270	PM
Bromodichloromethane	ND	ug/kg	2017 11/03/92	5.0	EPA Method 8240	PM
1,1-Dichloroethane	ND	ug/kg	2017 11/03/92	5.0	EPA Method 8240	PM
1,2-Dichloroethane	ND	ug/kg	2017 11/03/92	5.0	EPA Method 8240	PM
1,1-Dichloroethene	ND	ug/kg	2017 11/03/92	5.0	EPA Method 8240	PM
trans-1,2-Dichloroethene	ND	ug/kg	2017 11/03/92	5.0	EPA Method 8240	РМ
Dichlorodiflouromethane	ND	ug/kg	2017 11/03/92	1.0	EPA Method 8240	PM
1,2-Dichloropropane	ND	ug/kg	2017 11/03/92	5.0	EPA Method 8240	PM
cis-1,3-Dichloropropene	ND	ug/kg	2017 11/03/92	5.0	EPA Method 8240	PM
Diethyl phthalate	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
Dimethyl phthalate	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
Di-n-butylphthalate	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
Di-n-octylphthalate	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
2,4-Dinitrotoluene	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
2,6-Dinitrotoluene	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
1,2-DPH (as azobenzene)	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
Ethyl benzene	ND	ug/kg	2017 11/03/92	5.0	EPA Method 8240	PM



Analytical Chemistry • Utility Operations

11/05/92

222860 Continued

RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
ND	ug/kg	2017 11/03/92	5.0	EPA Method 8240	РМ
ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
ND	ug/kg	2017 11/03/92	5.0	EPA Method 8240	PM
ND	ug/kg	2017 11/03/92	5.0	EPA Method 8240	PM
ND	ug/kg	2017 11/03/92	5.0	EPA Method 8240	PM
ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
ND	ug/kg	2017 11/03/92	5.0	EPA Method 8240	PM
ND	ug/kg	2017 11/03/92	5.0	EPA Method 8240	PM
ND	ug/kg	2017 11/03/92	5.0	EPA Method 8240	PM
ND	ug/kg	2017 11/03/92	10	EPA Method 8240	PM
	ND N	ND ug/kg ND ug/kg	ND	ND	ND



Analytical Chemistry • Utility Operations

11/05/92

222860 Continued

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PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Vinyl Chloride	ND	ug/kg	2017 11/03/92	10	EPA Method 8240	PM
trans-1,3-Dichloropropene	ND	ug/kg	2017 11/03/92	5.0	EPA Method 8240	PM
2-Methylnaphthalene	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
Xylenes	ND	ug/kg	2017 11/03/92	10	EPA Method 8240	PH
Total Petroleum Hydrocarbons	8000	mg/kg	0900 10/13/92	100	EPA Method 418.1	· TEO

I certify that the results were generated using the above specified methods.

Whiteside, Ph.D., President



Analytical Chemistry • Utility Operations

11/06/92

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification: LF4-05-SS2 6'-7.6'

Collected By:

JPJ

Date & Time Taken:

10/02/92

Other Data: AFSCAPS Tinker AFB Job #5735

Bottle Data:

1 -- Unpreserved Plastic/Glass (00)

Lab Sample Number:	222861	Received:	10/09/92		Client: AF	lS1
PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
TCLP Liquid-Liquid Extraction	217->1	ml->ml	1404 10/22/92		EPA Method 3510	GE
TCLP Liq-Liq Extr. W/Hex Exch.	217->2	ml->ml	1435 10/22/92		EPA Method 3510	DDM
TCLP ZHE Volatile Extraction	79.0% Sol	Completed.	1700 10/17/92		EPA Method 1311	LM
TCLP Extraction	Aque/Sol/Ext#1		1533 10/20/92		EPA Method 1311	RJH
Esterification of Sample Extract	Completed.		1400 11/02/92		EPA Method 8150	KB
TCLP Benzene (Reg. Limit 0.5)	ND	mg/l	0229 11/04/92	0.05	EPA Method 8240-TCLP	PM
TCLP Gamma-BHC (Lindane) (.4)	ND	mg/l	1240 11/02/92	0.00036	EPA Method 8080-TCLP	KB
TCLP Carbon Tetrachloride (.5)	ND	mg/l	0229 11/04/92	0.05	EPA Method 8240-TCLP	PM
TCLP Chlordane (Reg. Limit 0.03)	ND	mg/l	1240 11/02/92	0.0013	EPA Method 8080-TCLP	KB
TCLP Chlorobenzene (Limit 100)	ND	mg/l	0229 11/04/92	0.05	EPA Method 8240-TCLP	PM
TCLP Chloroform (Reg. Limit 6.0)	.94	mg/l	0229 11/04/92	0.05	EPA Method 8240-TCLP	PM
TCLP 1,4 Dichlorobenzene: RL 7.5	ND	mg/l	0340 11/05/92	0.045	EPA Method 8270-TCLP	PM
TCLP 1,2-Dichloroethane (RL .5)	ND	mg/l	0229 11/04/92	0.05	EPA Method 8240-TCLP	PM
TCLP 1,1-Dichloroethene (.7)	.31	mg/l	0229 11/04/92	0.05	EPA Method 8240-TCLP	PM
TCLP 2,4-Dinitrotoluene (.13)	ND	mg/l	0340 11/05/92	0.045	EPA Method 8270-TCLP	PM
TCLP Endrin (Reg. Limit 0.02)	ND	mg/l	1240 11/02/92	0.00055	EPA Method 8080-TCLP	KB



Analytical Chemistry • Utility Operations

222861 Continued

					Page 2	
PARAMETER	RESULTS	UNITS	ANALYZED	707		
TCLP Heptachlor (Limit .008)	ND	mg/l	1240 11/02/92	- 4	METHOD	BY
TCI D Homesaki a			1240 11/02/92	0.0002	7 EPA Method 8080-TCLP	KB
TCLP Heptachlor Epoxide (.008)	ND	mg/l	1240 11/02/92	0.0075	EPA Method 8080-TCLP	KB
TCLP Hexachlorobenzene (.13)	ND	mg/l	0340 11/05/92	0.23	EPA Method 8270-TCLP	PM
TCLP Hexachlorobutadiene (.5)	ND	mg/į	0340 11/05/92	0.045	EPA Method 8270-TCLP	
TCLP Hexachlorethane (Limit 3)	ND	mg/l	0340 11/05/92	0.045		PM
TCLP Nitrobenzene (Limit 2)	ND			0.043	EPA Method 8270-TCLP	PM
	NU	mg/l	0340 11/05/92	0.045	EPA Method 8270-TCLP	PM
TCLP Pentachlorophenol (100)	ND	mg/l	0340 11/05/92	0.045	EPA Method 8270-TCLP	PM
TCLP Tetrachloroethylene (.7)	ND	mg/l	0229 11/04/92	0.05	EPA Method 8240-TCLP	PM
TCLP Toxaphene (Reg. Limit 0.5)	ND	mg/l	1240 11/02/92	0.022	EPA Method 8080-TCLP	
TCLP Trichloroethylene (.5)	ND	mg/l	0229 11/04/92	0.05	EPA Method 8240-TCLP	KB
TCLP 2,4,6-Trichlorophenol (2)	ND	mg/l	0340 11/05/92	0.045		PM
TCLP Vinyl Chloride (.2)	ND	mg/l	0229 11/04/92		EPA Method 8270-TCLP	PM
TCLP 2,4 D (Reg. Limit 10)	ND	mg/l		0.1	EPA Method 8240-TCLP	PM
TOLD 2 / E-Twinkley			1530 11/02/92	0.11	EPA Method 8150-TCLP	KB
TCLP 2,4,5-Trichlorophenol (400)	ND	mg/l	0340 11/05/92	0.045	EPA Method 8270-TCLP	PM
TCLP 2,4,5-TP (Silvex) (RL 1)	ND	mg/l	1530 11/02/92	0.015	EPA Method 8150-TCLP	КВ
TCLP Cresol (Reg. Limit 1)	1.1	mg/l	0340 11/05/92	0.045	EPA Method 8270-TCLP	
TCLP MEK (Reg. Limit 200)	.49	mg/l	0229 11/04/92	0.5		PM
TCLP Methoxychlor (RL 10)	ND		, , , , ,	0.5	EPA Method 8240-TCLP	PM
	U	mg/l	1240 11/02/92	0.016	EPA Method 8080-TCLP	KB
TCLP Pyridine (Reg. Limit 5)	ND	mg/l	0340 11/05/92	0.045	EPA Method 8270-TCLP	PM
Metals Digestion TCLP 3010	Digested 50/10	a/s	2200 10/29/92		EPA Method 3010	KDC
letals Digestion - TCLP 7470	Digested 50/10	a/s	0800 10/27/92		EPA Method 7470	
CLP Silver (Reg. Limit 5.0)	ND	mg/l	1104 11/06/92			BG
CLP Arsenic (Reg. Limit 5.0)	ND	mg/l	1104 11/06/92		EPA Method 6010	LW
CLP Barium (Reg. Limit 100.0)	ND	mg/l			EPA Method 6010	LW
		mar ·	1104 11/06/92	1.0	PA Method 6010	LW



Analytical Chemistry • Utility Operations

222861 Continued

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PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	ВУ
TCLP Cadmium (Reg. Limit 1.0)	.14	mg/l	1104 11/06/92	.01	EPA Method 6010	LW
TCLP Chromium (Reg. Limit 5.0)	ND	mg/l	1104 11/06/92	.02	EPA Method 6010	EW
TCLP Mercury (Reg. Limit 0.2)	ND	mg/l	1430 10/28/92	.005	EPA Method 7470	LW
* TCLP Lead (Reg. Limit 5.0)	ND	mg/l	1104 11/06/92	.1	EPA Method 6010	LW
TCLP Selenium (Reg. Limit 1.0)	ND	mg/l	1104 11/06/92	.2	EPA Method 6010	LW
•						

Reported results for TCLP analysis are corrected upward to reflect matrix spike recoveries.

I certify that the results were generated using the above specified methods.



Analytical Chemistry • Utility Operations

11/05/92

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification: LF4-06-SS1/SS2/SS3 2'-9.6'Comp

Collected By: JPJ

Date & Time Taken:

10/02/92

Other Data: AFSCAPS Tinker AFB Job #5735

Bottle Data: 1 -- Unpreserved Plastic/Glass (00)

Received: 10/09/92 Lab Sample Number: 222862 Client: ARS1

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Total Sonic Extraction	30->1	g->ml	1355 10/21/92		EPA Method 3550	DDM
Hydrocarbon Sonication Extract.	Completed		1700 10/12/92		EPA Method 3550 *MOD	TEO
Phenols	ND	mg/kg	1650 10/15/92	5	EPA Method 420.1	WMB
Phenol Distillation	DISTILLED		1800 10/13/92		EPA Method 420.1	CRH
Total Arsenic	ND	mg/kg	0938 11/05/92	1	EPA Method 6010	GDG
Total Barium	380	mg/kg	0938 11/05/92	.1	EPA Method 6010	GDG
Total Cadmium	17	mg/kg	0938 11/05/92	.1	EPA Method 6010	GDG
Total Chromium	48	mg/kg	0938 11/05/92	.2	EPA Method 6010	GDG
Total Mercury	.1	mg/kg	1330 10/15/92	.001	EPA Method 7470	L¥
Total Nickel	38	mg/kg	0938 11/05/92	.6	EPA Method 6010	GDG
Total Lead	340	mg/kg	0938 11/05/92	1	EPA Method 6010	G DG
Total Zinc	380	mg/kg	0938 11/05/92	.1	EPA Method 6010	GDG
Metals Digestion - 3050 Fl	Digested 50/4		0830 10/26/92		EPA Method 3050 Fl	JHL
Metals Digestion - 7471	Digested 50/1		1600 10/14/92		EPA Method 7471	BWP
Acenaphthene	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	PM
Acenaphthylene	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	PM
Acrolein	ND	ug/kg	1549 11/03/92	100	EPA Method 8240	GO



Analytical Chemistry • Utility Operations

222862 Continued

ARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	B
Acrylonitrile	ND	ug/kg	1549 11/03/92	100	EPA Method 8240	GC
Anthracene	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	PI
Benzene	ND	ug/kg	1549 11/03/92	5.0	EPA Method 8240	G
Benzidine	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	PI
enzo(a)anthracene	3400	ug/kg	0015 11/05/92	330	EPA Method 8270	P
enzo(a)pyrene	2200	ug/kg	0015 11/05/92	330	EPA Method 8270	Pi
enzo(b)fluoranthene	830	ug/kg	0015 11/05/92	330	EPA Method 8270	P
enzo(ghi)perylene	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	P
enzo(k)fluoranthene	1000	ug/kg	0015 11/05/92	330	EPA Method 8270	P
is(2-chloroethyl)ether	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	F
is(2-chloroethoxy)methane	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	F
is(2-chloroisopropyl)ether	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	
-Bromophenyl phenyl ether	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	F
is(2-ethylhexyl)phthalate	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	F
romoform	ND	ug/kg	1549 11/03/92	5.0	EPA Method 8240	(
romomethane	ND	ug/kg	1549 11/03/92	10	EPA Method 8240	-
-Chlorophenyl phenyl ether	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	
enzyl butyl phthalate	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	ı
Carbon Tetrachloride	ND	ug/kg	1549 11/03/92	5.0	EPA Method 8240	1
Chlorobenzene	140	ug/kg	1549 11/03/92	5.0	EPA Method 8240	,
Chloroethane	ND	ug/kg	1549 11/03/92	10	EPA Method 8240	(
2-Chloroethylvinyl ether	ND	ug/kg	1549 11/03/92	10	EPA Method 8240	4
Chloroform	ND	ug/kg	1549 11/03/92	5.0	EPA Method 8240	1
Chloromethane	ND	ug/kg	1549 11/03/92	10	EPA Method 8240	(



Analytical Chemistry • Utility Operations

11/05/92

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PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
2-Chloronaphthalene	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	PM
Chrysene	5800	ug/kg	0015 11/05/92	330	EPA Method 8270	PM
Dibenzo(a,h)anthracene	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	PM
Dibromochloromethane	ND	ug/kg	1549 11/03/92	5.0	EPA Method 8240	GS
1,3-Dichlorobenzene	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	PM
1,2-Dichlorobenzene	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	PM
1,4-Dichlorobenzene	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	PM
3,3'-Dichlorobenzidine	ND	ug/kg	0015 11/05/92	670	EPA Method 8270	PM
Bromodichloromethane	ND	ug/kg	1549 11/03/92	5.0	EPA Method 8240	GO
1,1-Dichloroethane	ND	ug/kg	1549 11/03/92	5.0	EPA Method 8240	GO
1,2-Dichloroethane	ND	ug/kg	1549 11/03/92	5.0	EPA Method 8240	GO
1,1-Dichloroethene	ND	ug/kg	1549 11/03/92	5.0	EPA Method 8240	GO
trans-1,2-Dichloroethene	ND	ug/kg	1549 11/03/92	5.0	EPA Method 8240	GO
Dichlorodiflouromethane	ND	ug/kg	1549 11/03/92	1.0	EPA Method 8240	G O
1,2-Dichloropropane	ND	ug/kg	1549 11/03/92	5.0	EPA Method 8240	G O
cis-1,3-Dichloropropene	ND	ug/kg	1549 11/03/92	5.0	EPA Method 8240	පෙ
Diethyl phthalate	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	PM
Dimethyl phthalate	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	PM
Di-n-butylphthalate	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	PM
Di-n-octylphthalate	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	PM
2,4-Dinitrotoluene	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	PM
2,6-Dinitrotoluene	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	PM
1,2-DPH (as azobenzene)	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	PM
Ethyl benzene	80	ug/kg	1549 11/03/92	5.0	EPA Method 8240	GO



Analytical Chemistry • Utility Operations

222862 Continued

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Fluoranthene	930	ug/kg	0015 11/05/92	330	EPA Method 8270	PM
Fluorene	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	PM
Hexachlorobenzene	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	РМ
Hexachlorobutadiene	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	PM
Hexachlorocyclopentadiene	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	PM
Hexachloroethane	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	PM
Indeno(1,2,3-cd)pyrene	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	PM
Isophorone	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	PM
Methylene Chloride	ND	ug/kg	1549 11/03/92	5.0	EPA Method 8240	GO
Naphthalene	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	PM
Nitrobenzene	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	PM
N-nitrosodimethylamine	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	PM
N-Nitrosodi-n-propylamine	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	PM
N-nitrosodiphenylamine	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	PM
Phenanthrene	2100	ug/kg	0015 11/05/92	330	EPA Method 8270	PM
Pyrene	2500	ug/kg	0015 11/05/92	330	EPA Method 8270	PM
1,1,2,2-Tetrachloroethane	ND	ug/kg	1549 11/03/92	5.0	EPA Method 8240	GO
Tetrachloroethene	ND	ug/kg	1549 11/03/92	5.0	EPA Method 8240	GO
Toluene	ND	ug/kg	1549 11/03/92	5.0	EPA Method 8240	GO
1,2,4-Trichlorobenzene	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	PM
1,1,1-Trichloroethane	ND	ug/kg	1549 11/03/92	5.0	EPA Method 8240	GO
1,1,2-Trichloroethane	ND	ug/kg	1549 11/03/92	5.0	EPA Method 8240	GO
Trichloroethene	ND	ug/kg	1549 11/03/92	5.0	EPA Method 8240	GO
Trichlorofluoromethane	ND	ug/kg	1549 11/03/92	10	EPA Method 8240	GO



Analytical Chemistry • Utility Operations

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BY
GO
GO
PM
GO
1 TEO
1

I certify that the results were generated using the above specified methods.

C.H. Whiteside, Ph.D., President



Analytical Chemistry • Utility Operations

11/05/92

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification: LF4-06-SS4 13'-14.6'

Collected By:

Date & Time Taken:

10/09/92

Other Data: AFSCAPS Tinker AFB Job #5735 Bottle Data: 1 -- Unpreserved Plastic/Glass (00)

Lab Sample Number: 222863 Received: 10/09/92

Client: ARS1

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Total Sonic Extraction	30->1	g->ml	1811 10/21/92		EPA Method 3550	LM
Total Arsenic	ND	mg/kg	0938 11/05/92		EPA Method 6010	GD
Total Barium	630	mg/kg	0938 11/05/92		EPA Method 6010	GDO
Total Cadmium	2.4	mg/kg	0938 11/05/92	.1	EPA Method 6010	GD
Total Chromium	38	mg/kg	0938 11/05/92	.2	EPA Method 6010	GDO
Total Mercury	ND	mg/kg	1330 10/15/92	.001	EPA Method 7470	LW
Total Nickel	29	mg/kg	0938 11/05/92	.6	EPA Method 6010	GD
Total Lead	8.1	mg/kg	0938 11/05/92	1	EPA Method 6010	GD
Total Zinc	54	mg/kg	0938 11/05/92	.1	EPA Method 6010	GD
Metals Digestion - 3050 Fl	Digested 50/4		0830 10/26/92		EPA Method 3050 Fl	JHI
Metals Digestion - 7471	Digested 50/1		1600 10/14/92		EPA Method 7471	BWF
Acrolein	ND	ug/kg	1622 11/03/92	100	EPA Method 8240	PM
Acrylonitrile	ND	ug/kg	1622 11/03/92	100	EPA Method 8240	PM
Benzene	ND	ug/kg	1622 11/03/92	5.0	EPA Method 8240	PM
Bromoform	ND	ug/kg	1622 11/03/92	5.0	EPA Method 8240	PM
Bromomethane	ND	ug/kg	1622 11/03/92	10	EPA Method 8240	PM
Carbon Tetrachloride	ND	ug/kg	1622 11/03/92	5.0	EPA Method 8240	PM



Analytical Chemistry • Utility Operations

222863 Continued

Danavana					rage 2	
PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	
Chlorobenzene	ND	ug/kg	1622 11/03/92	5.0	EPA Method 8240	BY PM
Chloroethane	ND	ug/kg	1622 11/03/92	10	EPA Method 8240	
2-Chloroethylvinyl ether	ND	ug/kg	1622 11/03/92	10		PM
Chloroform	ND	ug/kg	1622 11/03/92	5.0	EPA Method 8240	PM
Chloromethane	ND	ug/kg			EPA Method 8240	PM -
Dibaarah		49/ 49	1622 11/03/92	10	EPA Method 8240	PM
Dibromochloromethane	ND	ug/kg	1622 11/03/92	5.0	EPA Method 8240	PM
Bromodichloromethane	ND	ug/kg	1622 11/03/92	5.0	EPA Method 8240	PM
1,1-Dichloroethane	ND	ug/kg	1622 11/03/92	5.0	EPA Method 8240	PM
1,2-Dichloroethane	ND	ug/kg	1622 11/03/92	5.0	EPA Method 8240	
1,1-Dichloroethene	ND	ug/kg	1622 11/03/92	5.0		PM
trans-1,2-Dichloroethene	ND	ug/kg	1622 11/03/92		EPA Method 8240	PM
Dichlorodiflouromethane	ND	ug/kg		5.0	EPA Method 8240	PM
1,2-Dichloropropane	ND		1622 11/03/92	1.0	EPA Method 8240	PM
	ND	ug/kg	1622 11/03/92	5.0	EPA Method 8240	PM
cis-1,3-Dichloropropene	ND	ug/kg	1622 11/03/92	5.0	EPA Method 8240	PM
Ethyl benzene	ND	ug/kg	1622 11/03/92	5.0	EPA Method 8240	PM
Methylene Chloride	ND	ug/kg	1622 11/03/92	5.0	EPA Method 8240	
1,1,2,2-Tetrachloroethane	ND	ug/kg	1622 11/03/92	5.0	EPA Method 8240	PM _
Tetrachloroethene	ND			3.0	EPA Method 8240	PM
Toluene		ug/kg	1622 11/03/92	5.0	EPA Method 8240	PM ~
	ND	ug/kg	1622 11/03/92	5.0	EPA Method 8240	PM
1,1,1-Trichloroethane	ND	ug/kg	1622 11/03/92	5.0	EPA Method 8240	PM
1,1,2-Trichloroethane	ND	ug/kg	1622 11/03/92	5.0	EPA Method 8240	PM
Trichloroethene	ND	ug/kg	1622 11/03/92	5.0	EPA Method 8240	РМ
Trichlorofluoromethane	ND	ug/kg	1622 11/03/92	10	EPA Method 8240	
inyl Chloride	ND	ug/kg	1622 11/03/92	10		PM
			11,03/72	10	EPA Method 8240	PM



Analytical Chemistry • Utility Operations

222863 Continued

Page 3

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
trans-1,3-Dichloropropene	ND	ug/kg	1622 11/03/92	5.0	EPA Method 8240	PM
Xylenes	ND	ug/kg	1622 11/03/92	10	EPA Method 8240	PM

I certify that the results were generated using the above specified methods.

C.H. Whiteside, Ph.D., President



Analytical Chemistry • Utility Operations

11/05/92

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification: LF4-10-SS1 8'-9.6'

Collected By:

Date & Time Taken:

10/02/92

Other Data: AFSCAPS Tinker AFB Job #5735

Bottle Data: 1 -- Unpreserved Plastic/Glass (00)

Lab Sample Number: 222864 Received: 10/09/92

Client: ARS1

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Total Sonic Extraction	30->1	g->ml	1814 10/21/92		EPA Method 3550	LM
Hydrocarbon Sonication Extract.	Completed		1700 10/12/92		EPA Method 3550 *MOD	TEO
Phenols	ND	mg/kg	1650 10/15/92	5	EPA Method 420.1	WMB
Phenol Distillation	DISTILLED		1630 10/14/92		EPA Method 420.1	CRH
Total Arsenic	ND	mg/kg	0938 11/05/92	1	EPA Method 6010	GDG
Total Barium	640	mg/kg	0938 11/05/92	.1	EPA Method 6010	GDG
Total Cadmium	25	mg/kg	0938 11/05/92	.1	EPA Method 6010	GDG
Total Chromium	200	mg/kg	0938 11/05/92	.2	EPA Method 6010	GDG
Total Mercury	ND	mg/kg	1330 10/15/92	.001	EPA Method 7470	LW
Total Nickel	41	mg/kg	0938 11/05/92	.6	EPA Method 6010	GDG
Total Lead	23	mg/kg	0938 11/05/92	ī	EPA Method 6010	GDS
Total Zinc	40	mg/kg	0938 11/05/92	.1	EPA Method 6010	GDG
Metals Digestion - 3050 Fl	Digested 50/4		0830 10/26/92		EPA Method 3050 Fl	JHL
Metals Digestion - 7471	Digested 50/1		1600 10/14/92		EPA Method 7471	BWP
Acenaphthene	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
Acenaphthylene	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
Acrolein	ND	ug/kg	1655 11/03/92	100	EPA Method 8240	PM



Analytical Chemistry • Utility Operations

222864 Continued

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Acrylonitrile	ND	ug/kg	1655 11/03/92	100	EPA Method 8240	PM
Anthracene	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
Benzene	ND	ug/kg	1655 11/03/92	5.0	EPA Method 8240	PM
Benzidine	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
Benzo(a)anthracene	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
Benzo(a)pyrene	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
Benzo(b)fluoranthene	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
Benzo(ghi)perylene	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
Benzo(k)fluoranthene	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
Bis(2-chloroethyl)ether	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
Bis(2-chloroethoxy)methane	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
Bis(2-chloroisopropyl)ether	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
4-Bromophenyl phenyl ether	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
Bis(2-ethylhexyl)phthalate	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
Bromoform	ND	ug/kg	1655 11/03/92	5.0	EPA Method 8240	PM
Bromomethane	ND	ug/kg	1655 11/03/92	10	EPA Method 8240	PM
4-Chlorophenyl phenyl ether	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
Benzyl butyl phthalate	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
Carbon Tetrachloride	ND	ug/kg	1655 11/03/92	5.0	EPA Method 8240	PM
Chlorobenzene	ND	ug/kg	1655 11/03/92	5.0	EPA Method 8240	PM
Chloroethane	ND	ug/kg	1655 11/03/92	10	EPA Method 8240	PM
2-Chloroethylvinyl ether	ND	ug/kg	1655 11/03/92	10	EPA Method 8240	PM
Chloroform	ND	ug/kg	1655 11/03/92	5.0	EPA Method 8240	PM
Chloromethane	ND	ug/kg	1655 11/03/92	10	EPA Method 8240	PM



Analytical Chemistry • Utility Operations

222864 Continued

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
2-Chloronaphthalene	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
Chrysene	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
Dibenzo(a,h)anthracene	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
Dibromochloromethane	ND	ug/kg	1655 11/03/92	5.0	EPA Method 8240	PM -
1,3-Dichlorobenzene	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
1,2-Dichlorobenzene	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM~
1,4-Dichlorobenzene	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
3,3'-Dichlorobenzidine	ND	ug/kg	1127 11/04/92	670	EPA Method 8270	PM
Bromodichloromethane	ND	ug/kg	1655 11/03/92	5.0	EPA Method 8240	PM
1,1-Dichloroethane	ND	ug/kg	1655 11/03/92	5.0	EPA Method 8240	PM
1,2-Dichloroethane	ND	ug/kg	1655 11/03/92	5.0	EPA Method 8240	PM
1,1-Dichloroethene	ND	ug/kg	1655 11/03/92	5.0	EPA Method 8240	PM
trans-1,2-Dichloroethene	ND	ug/kg	1655 11/03/92	5.0	EPA Method 8240	PM
Dichlorodiflouromethane	ND	ug/kg	1655 11/03/92	1.0	EPA Method 8240	PM
1,2-Dichloropropane	ND	ug/kg	1655 11/03/92	5.0	EPA Method 8240	PM
cis-1,3-Dichloropropene	ND	ug/kg	1655 11/03/92	5.0	EPA Method 8240	PM.
Diethyl phthalate	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
Dimethyl phthalate	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM T
Di-n-butylphthalate	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
Di-n-octylphthalate	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
2,4-Dinitrotoluene	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
2,6-Dinitrotoluene	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
1,2-DPH (as azobenzene)	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
Ethyl benzene	ND	ug/kg	1655 11/03/92	5.0	EPA Method 8240	PM



Analytical Chemistry • Utility Operations

222864 Continued

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Fluoranthene	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
Fluorene	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
Hexachlorobenzene	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
Hexachlorobutadiene	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
Hexachlorocyclopentadiene	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
Hexachloroethane	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
Indeno(1,2,3-cd)pyrene	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
Isophorone	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
Methylene Chloride	ND	ug/kg	1655 11/03/92	5.0	EPA Method 8240	PM
Naphthalene	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
Nitrobenzene	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
N-nitrosodimethylamine	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
N-Nitrosodi-n-propylamine	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
N-nitrosodiphenylamine	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	P
Phenanthrene	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PA
Pyrene	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	P
1,1,2,2-Tetrachloroethane	ND	ug/kg	1655 11/03/92	5.0	EPA Method 8240	PI
Tetrachloroethene	ND	ug/kg	1655 11/03/92	5.0	EPA Method 8240	P
Toluene	ND	ug/kg	1655 11/03/92	5.0	EPA Method 8240	P
1,2,4-Trichlorobenzene	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
1,1,1-Trichloroethane	ND	ug/kg	1655 11/03/92	5.0	EPA Method 8240	Pt
1,1,2-Trichloroethane	ND	ug/kg	1655 11/03/92	5.0	EPA Method 8240	P
Trichloroethene	ND	ug/kg	1655 11/03/92	5.0	EPA Method 8240	PI
Trichlorofluoromethane	ND	ug/kg	1655 11/03/92	10	EPA Method 8240	PM



Analytical Chemistry • Utility Operations

11/05/92

222864 Continued

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PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Vinyl Chloride	ND	ug/kg	1655 11/03/92	10	EPA Method 8240	PM
trans-1,3-Dichloropropene	ND	ug/kg	1655 11/03/92	5.0	EPA Method 8240	PM
2-Methylnaphthalene	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
Xylenes	ND	ug/kg	1655 11/03/92	10	EPA Method 8240	PM
Total Petroleum Hydrocarbons	54	mg/kg	0900 10/13/92	10	EPA Method 418.1	TEO

I certify that the results were generated using the above specified methods.

C.H. Whiteside, Ph.D., President

APPENDIX M

ANALYTICAL RESULTS FROM WATER SAMPLES FROM LANDFILL NO. 4

THE COMPLETE SERVICE LAB

Analytical Chemistry • Utility Operations

11/05/92

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification:

LF4-05-W1 @9'

Collected By:

Date & Time Taken:

10/01/92

Other Data: AFSCAPS Tinker AFB Job #5735

Bottle Data: 2 -- 40 ml Glass Vial (Zero Headspace) with a Teflon Lined Lid (04)

Lab Sample Number: 222867 Received: 10/09/92

Client: ARS1

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Acrolein	ND	ug/l	1953 10/29/92	100	EPA Method 8240	PM
Acrylonitrile	ND	ug/l	1953 10/29/92	100	EPA Method 8240	PM
Benzene	110	ug/l	1953 10/29/92	5.0	EPA Method 8240	PM
Bromoform	37	ug/l	1953 10/29/92	5.0	EPA Method 8240	PM
Bromomethane	ND	ug/l	1953 10/29/92	10	EPA Method 8240	PM
Carbon Tetrachloride	ND	ug/l	1953 10/29/92	5.0	EPA Method 8240	PM
Chlorobenzene	ND	ug/l	1953 10/29/92	5.0	EPA Method 8240	PM
Chloroethane	ND	ug/l	1953 10/29/92	10	EPA Method 8240	PM
2-Chloroethylvinyl ether	ND	ug/l	1953 10/29/92	10	EPA Method 8240	PM.
Chloroform	ND	ug/l	1953 10/29/92	5.0	EPA Method 8240	PM
Chloromethane	ND	ug/l	1953 10/29/92	10	EPA Method 8240	PM -
Dibromochloromethane	ND	ug/l	1953 10/29/92	5.0	EPA Method 8240	PM
Bromodichloromethane	ND	ug/l	1953 10/29/92	5.0	EPA Method 8240	PM
1,1-Dichloroethane	17	ug/l	1953 10/29/92	5.0	EPA Method 8240	PM
1,2-Dichloroethane	21	ug/l	1953 10/29/92	5.0	EPA Method 8240	PM
1,1-Dichloroethene	ND	ug/l	1953 10/29/92	5.0	EPA Method 8240	PM
trans-1,2-Dichloroethene	220	ug/l	1953 10/29/92	5.0	EPA Method 8240	PM

Analytical Chemistry • Utility Operations

222867 Continued

Page 2

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Dichlorodiflouromethane	ND	ug/l	1953 10/29/92	1.0	EPA Method 8240	PM
1,2-Dichloropropane	ND	ug/l	1953 10/29/92	5.0	EPA Method 8240	PM
cis-1,3-Dichloropropene	ND	ug/l	1953 10/29/92	5.0	EPA Method 8240	PM
Ethyl benzene	230	ug/l	1953 10/29/92	5.0	EPA Method 8240	PM
Methylene Chloride	ND	ug/l	1953 10/29/92	5.0	EPA Method 8240	PM
1,1,2,2-Tetrachloroethane	ND	ug/l	1953 10/29/92	5.0	EPA Method 8240	PM
Tetrachloroethene	35	ug/l	1953 10/29/92	5.0	EPA Method 8240	PM
Toluene	3400	ug/l	1953 10/29/92	5.0	EPA Method 8240	PM
1,1,1-Trichloroethane	ND	ug/l	1953 10/29/92	5.0	EPA Method 8240	PM
1,1,2-Trichloroethane	ND	ug/l	1953 10/29/92	5.0	EPA Method 8240	PM
Trichloroethene	200	ug/l	1953 10/29/92	5.0	EPA Method 8240	PM
Trichlorofluoromethane	ND	ug/l	1953 10/29/92	10	EPA Method 8240	PM
Vinyl Chloride	ND	ug/l	1953 10/29/92	10	EPA Method 8240	PM
trans-1,3-Dichloropropene	ND	ug/l	1953 10/29/92	5.0	EPA Method 8240	PM
Xylenes	570	ug/l	1953 10/29/92	10	EPA Method 8240	PM

I certify that the results were generated using the above specified methods.

C.H. Whiteside, Ph.D., President

Analytical Chemistry • Utility Operations

11/05/92

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification:

LF4-06-W1 @4'

Collected By:

Date & Time Taken: 10/01/92

Other Data: AFSCAPS Tinker AFB Job #5735

Bottle Data: 1 -- 40 ml Glass Vial (Zero Headspace) with a Teflon Lined Lid (04)

Lab Sample Number: 222865 Received: 10/09/92

Client: ARS1

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	ВУ
Acrolein	ND	ug/l	1844 10/29/92	100	EPA Method 8240	PM
Acrylonitrile	ND	ug/l	1844 10/29/92	100	EPA Method 8240	PM
Benzene	ND	ug/l	1844 10/29/92	5.0	EPA Method 8240	PM
Bromoform	ND	ug/l	1844 10/29/92	5.0	EPA Method 8240	PM
Bromomethane	ND	ug/l	1844 10/29/92	10	EPA Method 8240	PM
Carbon Tetrachloride	ND	ug/l	1844 10/29/92	5.0	EPA Method 8240	PM
Chlorobenzene	50	ug/l	1844 10/29/92	5.0	EPA Method 8240	PM
Chloroethane	ND	ug/l	1844 10/29/92	10	EPA Method 8240	PM
2-Chloroethylvinyl ether	ND	ug/l	1844 10/29/92	10	EPA Method 8240	PM
Chloroform	ND	ug/l	1844 10/29/92	5.0	EPA Method 8240	PM
Chloromethane	ND	ug/l	1844 10/29/92	10	EPA Method 8240	PM ⁻
Dibromochloromethane	ND	ug/l	1844 10/29/92	5.0	EPA Method 8240	PM
Bromodichloromethane	ND	ug/l	1844 10/29/92	5.0	EPA Method 8240	PM
1,1-Dichloroethane	ND	ug/l	1844 10/29/92	5.0	EPA Method 8240	PM
1,2-Dichloroethane	ND	ug/l	1844 10/29/92	5.0	EPA Method 8240	PM
1,1-Dichloroethene	ND	ug/l	1844 10/29/92	5.0	EPA Method 8240	PM
trans-1,2-Dichloroethene	ND	ug/l	1844 10/29/92	5.0	EPA Method 8240	PM



Analytical Chemistry • Utility Operations

11/05/92

222865 Continued

Page 2

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PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Dichlorodiflouromethane	ND	ug/l	1844 10/29/92	1.0	EPA Method 8240	PM
1,2-Dichloropropane	ND	ug/l	1844 10/29/92	5.0	EPA Method 8240	PM
cis-1,3-Dichloropropene	ND	ug/l	1844 10/29/92	5.0	EPA Method 8240	PM
Ethyl benzene	110	ug/l	1844 10/29/92	5.0	EPA Method 8240	PM
Methylene Chloride	ND	ug/l	1844 10/29/92	5.0	EPA Method 8240	PM
1,1,2,2-Tetrachloroethane	ND	ug/l	1844 10/29/92	5.0	EPA Method 8240	PM
Tetrachloroethene	ND	ug/l	1844 10/29/92	5.0	EPA Method 8240	PM
Toluene	ND	ug/l	1844 10/29/92	5.0	EPA Method 8240	PM
1,1,1-Trichloroethane	ND	ug/l	1844 10/29/92	5.0	EPA Method 8240	PM
1,1,2-Trichloroethane	ND	ug/l	1844 10/29/92	5.0	EPA Method 8240	PM
Trichloroethene	ND	ug/l	1844 10/29/92	5.0	EPA Method 8240	PM
Trichlorofluoromethane	ND	ug/l	1844 10/29/92	10	EPA Method 8240	PM
Vinyl Chloride	ND	ug/l	1844 10/29/92	10	EPA Method 8240	PM
trans-1,3-Dichloropropene	ND	ug/l	1844 10/29/92	5.0	EPA Method 8240	PM
Xylenes	170	ug/l	1844 10/29/92	10	EPA Method 8240	PM

I certify that the results were generated using the above specified methods.



Analytical Chemistry • Utility Operations

11/05/92

Client: ARS1

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification:

LF4-06-W2 @15.5'

Collected By: JI

Date & Time Taken:

10/01/92

Other Data: AFSCAPS Tinker AFB Job #5735

Bottle Data: 2 -- 40 ml Glass Vial (Zero Headspace) with a Teflon Lined Lid (04)

Lab Sample Number: 222866 Received: 10/09/92

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Acrolein	ND	ug/l	1919 10/29/92	100	EPA Method 8240	GO
Acrylonitrile	ND	ug/l	1919 10/29/92	100	EPA Method 8240	GO
Benzene	ND	ug/l	1919 10/29/92	5.0	EPA Method 8240	GO
Bromoform	ND	ug/l	1919 10/29/92	5.0	EPA Method 8240	GO
Bromomethane	ND	ug/l	1919 10/29/92	10	EPA Method 8240	GO
Carbon Tetrachloride	ND	ug/l	1919 10/29/92	5.0	EPA Method 8240	GO
Chlorobenzene	15	ug/l	1919 10/29/92	5.0	EPA Method 8240	GO
Chloroethane	ND	ug/l	1919 10/29/92	10	EPA Method 8240	GO
2-Chloroethylvinyl ether	ND	ug/l	1919 10/29/92	10	EPA Method 8240	GO
Chloroform	ND	ug/l	1919 10/29/92	5.0	EPA Method 8240	GO
Chloromethane	ND	ug/l	1919 10/29/92	10	EPA Method 8240	GO
Dibromochloromethane	ND	ug/l	1919 10/29/92	5.0	EPA Method 8240	GO
Bromodichloromethane	ND	ug/l	1919 10/29/92	5.0	EPA Method 8240	GO
1,1-Dichloroethane	ND	ug/l	1919 10/29/92	5.0	EPA Method 8240	GO
1,2-Dichloroethane	ND	ug/l	1919 10/29/92	5.0	EPA Method 8240	GO
1,1-Dichloroethene	ND	ug/l	1919 10/29/92	5.0	EPA Method 8240	GO
trans-1,2-Dichloroethene	ND	ug/l	1919 10/29/92	5.0	EPA Method 8240	GO



Analytical Chemistry • Utility Operations

11/05/92

222866 Continued

Page 2

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Dichlorodiflouromethane	ND	ug/l	1919 10/29/92	1.0	EPA Method 8240	GO
1,2-Dichloropropane	ND	ug/l	1919 10/29/92	5.0	EPA Method 8240	GO
cis-1,3-Dichloropropene	ND	ug/l	1919 10/29/92	5.0	EPA Method 8240	GO
Ethyl benzene	160	ug/l	1919 10/29/92	5.0	EPA Method 8240	GO
Methylene Chloride	ND	ug/l	1919 10/29/92	5.0	EPA Method 8240	GO
1,1,2,2-Tetrachloroethane	ND	ug/l	1919 10/29/92	5.0	EPA Method 8240	GO
Tetrachloroethene	ND	ug/l	1919 10/29/92	5.0	EPA Method 8240	GO
Toluene	ND	ug/l	1919 10/29/92	5.0	EPA Method 8240	GO
1,1,1-Trichloroethane	ND	ug/l	1919 10/29/92	5.0	EPA Method 8240	GO
1,1,2-Trichloroethane	ND	ug/l	1919 10/29/92	5.0	EPA Method 8240	GO
Trichloroethene	ND	ug/l	1919 10/29/92	5.0	EPA Method 8240	GO
Trichlorofluoromethane	ND	ug/l	1919 10/29/92	10	EPA Method 8240	GO
Vinyl Chloride	ND	ug/l	1919 10/29/92	10	EPA Method 8240	GO
trans-1,3-Dichloropropene	ND	ug/l	1919 10/29/92	5.0	EPA Method 8240	GO
Xylenes	ND	ug/l	1919 10/29/92	5.0	EPA Method 8240	GO

I certify that the results were generated using the above specified methods.

APPENDIX N

ANALYTICAL RESULTS FROM SOIL SAMPLES FROM OFFBASE (BONNEWELL) AREA



Analytical Chemistry • Utility Operations

11/05/92

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification:

OFB-B01-SS1 6'-7'

Collected By: JPJ

Date & Time Taken:

09/28/92

Other Data: AFSCAPS Job # 5735, Tinker AFB
Bottle Data: 1 -- Unpreserved Plastic/Glass (00)

Lab Sample Number: 222091 Received: 09/30/92

Client: ARS1

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Total Sonic Extraction	30->1	g->ml	1259 10/13/92	****	EPA Method 3550	DDM
Phenols	ND	mg/kg	1445 10/12/92	5	EPA Method 420.1	WMB
Phenol Distillation	DISTILLED		2030 10/08/92		EPA Method 420.1	WKC
Total Arsenic	2	mg/kg	1136 10/15/92	1	EPA Method 6010	RJC
Total Barium	220	mg/kg	1136 10/15/92	.1	EPA Method 6010	RJC
Total Cadmium	3	mg/kg	1136 10/15/92	.1	EPA Method 6010	RJC
Total Chromium	16	mg/kg	1136 10/15/92	.2	EPA Method 6010	RJC
Total Mercury	ND	mg/kg	1200 11/05/92	.05	EPA Method 7470	LW
Total Nickel	8.6	mg/kg	1244 10/14/92	.6	EPA Method 6010	RJC
Total Lead	3	mg/kg	1136 10/15/92	1	EPA Method 6010	RJC
Total Zinc	15	mg/kg	1244 10/14/92	.1	EPA Method 6010	RJĆ
Metals Digestion - 3050 Fl	Digested 50/4		0730 10/08/92		EPA Method 3050 Fl	JHL
Metals Digestion - 7471	Digested 50/1		2000 11/02/92		EPA Method 7471	KDC
Acenaphthene	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
Acenaphthylene	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
Anthracene	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
Benzidine	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM



Analytical Chemistry • Utility Operations

222091 Continued

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Benzo(a)anthracene	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
Benzo(a)pyrene	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
Benzo(b)fluoranthene	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
Benzo(ghi)perylene	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
Benzo(k)fluoranthene	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
Bis(2-chloroethyl)ether	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
Bis(2-chloroethoxy)methane	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
Bis(2-chloroisopropyl)ether	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
4-Bromophenyl phenyl ether	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
Bis(2-ethylhexyl)phthalate	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	РМ
4-Chlorophenyl phenyl ether	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
Benzyl butyl phthalate	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
2-Chloronaphthalene	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
Chrysene	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
Dibenzo(a,h)anthracene	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
1,3-Dichlorobenzene	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
1,2-Dichlorobenzene	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
1,4-Dichlorobenzene	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
3,3'-Dichlorobenzidine	ND	ug/kg	2229 11/02/92	670	EPA Method 8270	PM
Diethyl phthalate	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
Dimethyl phthalate	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
Di-n-butylphthalate	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	РМ
Di-n-octylphthalate	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
2,4-Dinitrotoluene	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM

Analytical Chemistry • Utility Operations

222091 Continued

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PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
2,6-Dinitrotoluene	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	P M
1,2-DPH (as azobenzene)	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
Fluoranthene	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
Fluorene	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
Hexachlorobenzene	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
Hexachlorobutadiene	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM "
Hexachlorocyclopentadiene	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
Hexachloroethane	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
Indeno(1,2,3-cd)pyrene	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
Isophorone	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
Naphthalene	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
Nitrobenzene	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
N-nitrosodimethylamine	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
N-Nitrosodi-n-propylamine	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	P M
N-nitrosodiphenylamine	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
Phenanthrene	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
Pyrene	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
1,2,4-Trichlorobenzene	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM *
2-Methylnaphthalene	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM

I certify that the results were generated using the above specified methods.



Analytical Chemistry • Utility Operations

11/05/92

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification: OFB-B01-SS2 9'-10'

Collected By:

09/28/92 1630

Date & Time Taken: Other Data: AFSCAPS Job # 5735, Tinker AFB

Bottle Data: 1 -- Unpreserved Plastic/Glass (00)

Lab Sample Number: 222092 Received: 09/30/92

Client: ARS1

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
2-Methylnaphthalene	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
Total Sonic Extraction	30->1	g->ml	1323 10/13/92		EPA Method 3550	GE
Phenols	ND	mg/kg	1445 10/12/92	5	EPA Method 420.1	WME
Phenol Distillation	DISTILLED		2030 10/08/92		EPA Method 420.1	WK
Total Arsenic	ND	mg/kg	1136 10/15/92	1	EPA Method 6010	RJO
Total Barium	1200	mg/kg	1136 10/15/92	.1	EPA Method 6010	RJO
Total Cadmium	4	mg/kg	1136 10/15/92	.1	EPA Method 6010	RJO
Total Chromium	30	mg/kg	1136 10/15/92	.2	EPA Method 6010	RJO
Total Mercury	ND	mg/kg	1200 11/05/92	.05	EPA Method 7470	LW
Total Nickel	23	mg/kg	1244 10/14/92	.6	EPA Method 6010	RJO
Total Lead	3	mg/kg	1136 10/15/92	1	EPA Method 6010	RJ
Total Zinc	28	mg/kg	1244 10/14/92	.1	EPA Method 6010	RJ
Metals Digestion - 3050 Fl	Digested 50/4		0730 10/08/92		EPA Method 3050 Fl	THI
Metals Digestion - 7471	Digested 50/1		2000 11/02/92		EPA Method 7471	KD
Acenaphthene	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
Acenaphthylene	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
Aldrin	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO



Analytical Chemistry • Utility Operations

222092 Continued

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Anthracene	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
Benzidine	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
Benzo(a)anthracene	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
Benzo(a)pyrene	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
Benzo(b)fluoranthene	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
Benzo(ghi)perylene	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO -
Benzo(k)fluoranthene	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
Bis(2-chloroethyl)ether	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
Bis(2-chloroethoxy)methane	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
Bis(2-chloroisopropyl)ether	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
4-Bromophenyl phenyl ether	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
Bis(2-ethylhexyl)phthalate	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
4-Chlorophenyl phenyl ether	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
Benzyl butyl phthalate	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
2-Chloronaphthalene	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
Chrysene	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO _
Dibenzo(a,h)anthracene	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
1,3-Dichlorobenzene	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
1,2-Dichlorobenzene	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
1,4-Dichlorobenzene	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
3,3'-Dichlorobenzidine	ND	ug/kg	1435 11/03/92	670	EPA Method 8270	GO
Diethyl phthalate	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
Dimethyl phthalate	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
Di-n-butylphthalate	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO



Analytical Chemistry • Utility Operations

222092 Continued

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PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Di-n-octylphthalate	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
2,4-Dinitrotoluene	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
2,6-Dinitrotoluene	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
1,2-DPH (as azobenzene)	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
Fluoranthene	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
Fluorene	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
Hexachlorobenzene	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
Hexachlorobutadiene	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
Hexachlorocyclopentadiene	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
Hexachloroethane	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
Indeno(1,2,3-cd)pyrene	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
Isophorone	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
Naphthalene	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
Nîtrobenzene	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
N-nitrosodimethylamine	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
N-Nitrosodi-n-propylamine	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
N-nitrosodiphenylamine	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
Phenanthrene	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
Pyrene	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
1,2,4-Trichlorobenzene	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO

I certify that the results were generated using the above specified methods.



Analytical Chemistry • Utility Operations

11/05/92

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification:

OFB-B01-SS3 16'-17'

Collected By:

Date & Time Taken:

1640 09/28/92

Other Data: AFSCAPS Job # 5735, Tinker AFB

Bottle Data: 1 -- Unpreserved Plastic/Glass (00)

1 -- 40 ml Glass Vial (Zero Headspace) with a Teflon Lined Lid (04)

Lab Sample Number: 222093 **Received:** 09/30/92 Client: ARS1

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Total Sonic Extraction	30->1	g->ml	1344 10/13/92		EPA Method 3550	GE
Phenols	ND	mg/kg	1445 10/12/92	5	EPA Method 420.1	WMB
Phenol Distillation	DISTILLED		1800 10/07/92		EPA Method 420.1	WKC
Total Arsenic	13	mg/kg	1136 10/15/92	1	EPA Method 6010	RJC
Total Barium	74	mg/kg	1136 10/15/92	.1	EPA Method 6010	RJC
Total Cadmium	5	mg/kg	1136 10/15/92	.1	EPA Method 6010	RJC
Total Chromium	23	mg/kg	1136 10/15/92	.2	EPA Method 6010	RJC
Total Mercury	ND	mg/kg	1200 11/05/92	.05	EPA Method 7470	LW
Total Nickel	19	mg/kg	1244 10/14/92	.6	EPA Method 6010	RJC
Total Lead	3	mg/kg	1136 10/15/92	1	EPA Method 6010	RJC
Total Zinc	29	mg/kg	1244 10/14/92	.1	EPA Method 6010	RJC
Metals Digestion - 3050 Fl	Digested 50/4		0730 10/08/92		EPA Method 3050 Fl	JHL
Metals Digestion - 7471	Digested 50/1		2000 11/02/92		EPA Method 7471	KDC
Acenaphthene	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
Acenaphthylene	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
Acrolein	ND	ug/kg	0058 10/31/92	100	EPA Method 8240	GO
Acrylonitrile	ND	ug/kg	0058 10/31/92	100	EPA Method 8240	GO



Analytical Chemistry • Utility Operations

222093 Continued

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PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Anthracene	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
Benzene	ND	ug/kg	0058 10/31/92	5.0	EPA Method 8240	GO
Benzidine	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
Benzo(a)anthracene	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
Benzo(a)pyrene	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
Benzo(b)fluoranthene	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
Benzo(ghi)perylene	ND .	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
Benzo(k)fluoranthene	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
Bis(2-chloroethyl)ether	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
Bis(2-chloroethoxy)methane	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
Bis(2-chloroisopropyl)ether	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
4-Bromophenyl phenyl ether	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
Bis(2-ethylhexyl)phthalate	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
Bromoform	ND	ug/kg	0058 10/31/92	5.0	EPA Method 8240	GO
Bromomethane	ND	ug/kg	0058 10/31/92	10	EPA Method 8240	GO
4-Chlorophenyl phenyl ether	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
Benzyl butyl phthalate	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
Carbon Tetrachloride	ND	ug/kg	0058 10/31/92	5.0	EPA Method 8240	GO
Chlorobenzene	ND	ug/kg	0058 10/31/92	5.0	EPA Method 8240	GO
Chloroethane	ND	ug/kg	0058 10/31/92	10	EPA Method 8240	GO
2-Chloroethylvinyl ether	ND	ug/kg	0058 10/31/92	10	EPA Method 8240	GO
Chloroform	ND	ug/kg	0058 10/31/92	5.0	EPA Method 8240	GO
Chloromethane	ND	ug/kg	0058 10/31/92	10	EPA Method 8240	GO
2-Chloronaphthalene	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM



Analytical Chemistry • Utility Operations

11/05/92

222093 Continued

DADAY COURT	DEGIII MG	TINT TO	33137 2777	BOT	WEIMINGE	
PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Chrysene	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
Dibenzo(a,h)anthracene	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
Dibromochloromethane	ND	ug/kg	0058 10/31/92	5.0	EPA Method 8240	GO
1,3-Dichlorobenzene	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM•
1,2-Dichlorobenzene	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
1,4-Dichlorobenzene	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM ²
3,3'-Dichlorobenzidine	ND	ug/kg	1233 11/04/92	670	EPA Method 8270	PM
Bromodichloromethane	ND	ug/kg	0058 10/31/92	5.0	EPA Method 8240	GO
1,1-Dichloroethane	ND	ug/kg	0058 10/31/92	5.0	EPA Method 8240	GO
1,2-Dichloroethane	ND	ug/kg	0058 10/31/92	5.0	EPA Method 8240	GO
1,1-Dichloroethene	ND	ug/kg	0058 10/31/92	5.0	EPA Method 8240	GO
trans-1,2-Dichloroethene	ND	ug/kg	0058 10/31/92	5.0	EPA Method 8240	GO
Dichlorodiflouromethane	ND	ug/kg	0058 10/31/92	1.0	EPA Method 8240	GO
1,2-Dichloropropane	ND	ug/kg	0058 10/31/92	5.0	EPA Method 8240	GO
cis-1,3-Dichloropropene	ND	ug/kg	0058 10/31/92	5.0	EPA Method 8240	GO
Diethyl phthalate	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
Dimethyl phthalate	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
Di-n-butylphthalate	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
Di-n-octylphthalate	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
2,4-Dinitrotoluene	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
2,6-Dinitrotoluene	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
1,2-DPH (as azobenzene)	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	РМ
Ethyl benzene	ND	ug/kg	0058 10/31/92	5.0	EPA Method 8240	GO
Fluoranthene	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM



Analytical Chemistry • Utility Operations

222093 Continued

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PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Fluorene	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
Hexachlorobenzene	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
Hexachlorobutadiene	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
Hexachlorocyclopentadiene	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
Hexachioroethane	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
Indeno(1,2,3-cd)pyrene	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
Isophorone	NÐ	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
Methylene Chloride	ND	ug/kg	0058 10/31/92	5.0	EPA Method 8240	GO
Naphthalene	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
Nitrobenzene	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
N-nitrosodimethylamine	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
N-Nitrosodi-n-propylamine	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
N-nitrosodiphenylamine	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
Phenanthrene	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
Pyrene	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
1,1,2,2-Tetrachloroethane	ND	ug/kg	0058 10/31/92	5.0	EPA Method 8240	GO
Tetrachloroethene	ND	ug/kg	0058 10/31/92	5.0	EPA Method 8240	GO
Toluene	ND	ug/kg	0058 10/31/92	5.0	EPA Method 8240	GO
1,2,4-Trichlorobenzene	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
1,1,1-Trichloroethane	ND	ug/kg	0058 10/31/92	5.0	EPA Method 8240	GO
1,1,2-Trichloroethane	ND	ug/kg	0058 10/31/92	5.0	EPA Method 8240	GO
Trichloroethene	ND	ug/kg	0058 10/31/92	5.0	EPA Method 8240	GO
Trichlorofluoromethane	ND	ug/kg	0058 10/31/92	10	EPA Method 8240	GO
Vinyl Chloride	ND	ug/kg	0058 10/31/92	10	EPA Method 8240	GO



Analytical Chemistry • Utility Operations

11/05/92 222093 Continued

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PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	ВУ
trans-1,3-Dichloropropene	ND	ug/kg	0058 10/31/92	5.0	EPA Method 8240	GO
2-Methylnaphthalene	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	РМ
Xylenes	ND	ug/kg	0132 10/31/92	10	EPA Method 8240	PM

I certify that the results were generated using the above specified methods.



Analytical Chemistry • Utility Operations

11/05/92

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification:

OFB-B01-SS4 21'-22'

Collected By:

Date & Time Taken:

09/28/92 1715

Other Data: AFSCAPS Job # 5735, Tinker AFB

Bottle Data: 1 -- Unpreserved Plastic/Glass (00)

Lab Sample Number: 222094 Received: 09/30/92

Client: ARS1

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Total Sonic Extraction	30->1	g->ml	1328 10/13/92	7	EPA Method 3550	GE
Phenols	ND	mg/kg	1445 10/12/92	5	EPA Method 420.1	WMB
Phenol Distillation	DISTILLED		1800 10/07/92		EPA Method 420.1	WKC
Total Arsenic	1	mg/kg	1136 10/15/92	1	EPA Method 6010	RJC
Total Barium	16	mg/kg	1136 10/15/92	.1	EPA Method 6010	RJC
Total Cadmium	1	mg/kg	1136 10/15/92	.1	EPA Method 6010	RJC
Total Chromium	8	mg/kg	1136 10/15/92	.2	EPA Method 6010	RJC
Total Mercury	ND	mg/kg	1200 11/05/92	.05	EPA Method 7470	LW
, Total Nickel	5.8	mg/kg	1244 10/14/92	.6	EPA Method 6010	RJC
Total Lead	ND	mg/kg	1136 10/15/92	1	EPA Method 6010	RJC
Total Zinc	8.1	mg/kg	1244 10/14/92	.1	EPA Method 6010	RJC
Metals Digestion - 3050 Fl	Digested 50/4		0730 10/08/92		EPA Method 3050 Fl	JHL
Metals Digestion - 7471	Digested 50/1		2000 11/02/92		EPA Method 7471	KDC
Acenaphthene	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
Acenaphthylene	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
Anthracene	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
Benzidine	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM



Analytical Chemistry • Utility Operations

222094 Continued

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Benzo(a)anthracene	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
Benzo(a)pyrene	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
Benzo(b)fluoranthene	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
Benzo(ghi)perylene	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	P M
Benzo(k)fluoranthene	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	P M
Bis(2-chloroethyl)ether	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM_
Bis(2-chloroethoxy)methane	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	P M
Bis(2-chloroisopropyl)ether	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
4-Bromophenyl phenyl ether	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
Bis(2-ethylhexyl)phthalate	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
4-Chlorophenyl phenyl ether	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
Benzyl butyl phthalate	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
2-Chloronaphthalene	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
Chrysene	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
Dibenzo(a,h)anthracene	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
1,3-Dichlorobenzene	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
1,2-Dichlorobenzene	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
1,4-Dichlorobenzene	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM*
3,3'-Dichlorobenzidine	ND	ug/kg	0059 11/05/92	670	EPA Method 8270	PM
Diethyl phthalate	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
Dimethyl phthalate	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
Di-n-butylphthalate	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
Di-n-octylphthalate	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
2,4-Dinitrotoluene	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM



Analytical Chemistry • Utility Operations

222094 Continued

Page 3

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
2,6-Dinitrotoluene	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
1,2-DPH (as azobenzene)	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
Fluoranthene	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
Fluorene	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
Hexachlorobenzene	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
Hexachlorobutadiene	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
Hexachlorocyclopentadiene	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
Hexachloroethane	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
Indeno(1,2,3-cd)pyrene	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
Isophorone	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
Naphthalene	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
Nitrobenzene	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
N-nitrosodimethylamine	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
N-Nitrosodi-n-propylamine	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
N-nitrosodiphenylamine	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
Phenanthrene	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
Pyrene	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
1,2,4-Trichlorobenzene	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
2-Methylnaphthalene	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM

I certify that the results were generated using the above specified methods.



Analytical Chemistry • Utility Operations

11/05/92

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification:

OFB-B02-SS2 11'-12'

Collected By:

Date & Time Taken:

09/28/92 1800

Other Data: AFSCAPS Job # 5735, Tinker AFB

Bottle Data: 1 -- Unpreserved Plastic/Glass (00)

Lab Sample Number: 222095 Received: 09/30/92

Client: ARS1

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Total Sonic Extraction	30->1	g->ml	1340 10/13/92		EPA Method 3550	GE
Phenols	ND	mg/kg	1700 10/14/92	5	EPA Method 420.1	WMI
Phenol Distillation	DISTILLED		2100 10/07/92		EPA Method 420.1	WK
Total Arsenic	3	mg/kg	1136 10/15/92	1	EPA Method 6010	RJ
Total Barium	290	mg/kg	1136 10/15/92	.1	EPA Method 6010	RJ
Total Cadmium	5.3	mg/kg	1136 10/15/92	.1	EPA Method 6010	RJ
Total Chromium	19	mg/kg	1136 10/15/92	.2	EPA Method 6010	RJ
Total Mercury	ND	mg/kg	1200 11/05/92	.05	EPA Method 7470	LW
Total Nickel	14	mg/kg	1244 10/14/92	.6	EPA Method 6010	RJ
Total Lead	6.4	mg/kg	1136 10/15/92	1	EPA Method 6010	RJ
Total Zinc	21	mg/kg	1244 10/14/92	.1	EPA Method 6010	RJ
Metals Digestion - 3050 Fl	Digested 50/4		0730 10/08/92		EPA Method 3050 Fl	JHI
Metals Digestion - 7471	Digested 50/1		2000 11/02/92		EPA Method 7471	KDO
Acenaphthene	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
Acenaphthylene	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
Anthracene	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
Benzidine	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM



Analytical Chemistry • Utility Operations

222095 Continued

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Benzo(a)anthracene	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
Benzo(a)pyrene	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
Benzo(b)fluoranthene	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
Benzo(ghi)perylene	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
Benzo(k)fluoranthene	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
Bis(2-chloroethyl)ether	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
Bis(2-chloroethoxy)methane	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
Bis(2-chloroisopropyl)ether	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
4-Bromophenyl phenyl ether	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
Bis(2-ethylhexyl)phthalate	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
4-Chlorophenyl phenyl ether	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
Benzyl butyl phthalate	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
2-Chloronaphthalene	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
Chrysene	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
Dibenzo(a,h)anthracene	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
1,3-Dichlorobenzene	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
1,2-Dichlorobenzene	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
1,4-Dichlorobenzene	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
3,3'-Dichlorobenzidine	ND	ug/kg	1631 11/03/92	670	EPA Method 8270	PM
Diethyl phthalate	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
Dimethyl phthalate	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
Di-n-butylphthalate	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
Di-n-octylphthalate	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
2,4-Dinitrotoluene	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM



Analytical Chemistry • Utility Operations

222095 Continued

Page 3

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
2,6-Dinitrotoluene	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
1,2-DPH (as azobenzene)	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
Fluoranthene	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
Fluorene	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM .
Hexachlorobenzene	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
Hexachlorobutadiene	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM ~
Hexachlorocyclopentadiene	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
Hexachloroethane	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
Indeno(1,2,3-cd)pyrene	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
Isophorone	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
Naphthalene	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
Nitrobenzene	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
N-nitrosodimethylamine	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
N-Nitrosodi-n-propylamine	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
N-nitrosodiphenylamine	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
Phenanthrene	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM _
Pyrene	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
1,2,4-Trichlorobenzene	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
2-Methylnaphthalene	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM

I certify that the results were generated using the above specified methods.



Analytical Chemistry • Utility Operations

11/05/92

Client: ARS1

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification:

OFB-B02-SS4 22'-23'

Collected By:

Date & Time Taken:

09/28/92 1830

Other Data: AFSCAPS Job # 5735, Tinker AFB

Bottle Data: 1 -- Unpreserved Plastic/Glass (00)

1 -- 40 ml Glass Vial (Zero Headspace) with a Teflon Lined Lid (04)

Lab Sample Number: 222097 Received: 09/30/92

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Total Sonic Extraction	30->1	g->ml	1508 10/13/92		EPA Method 3550	GE
Phenols	ND	mg/kg	1700 10/14/92	5	EPA Method 420.1	WMB
Phenol Distillation	DISTILLED		1730 10/09/92		EPA Method 420.1	WKC
Total Arsenic	ND	mg/kg	1136 10/15/92	1	EPA Method 6010	RJC
Total Barium	51	mg/kg	1136 10/15/92	.1	EPA Method 6010	RJC
Total Cadmium	3	mg/kg	1136 10/15/92	.1	EPA Method 6010	RJC
Total Chromium	12	mg/kg	1136 10/15/92	.2	EPA Method 6010	RJC
Total Mercury	ND	mg/kg	1200 11/05/92	.05	EPA Method 7470	LW
Total Nickel	10	mg/kg	1244 10/14/92	.6	EPA Method 6010	RJC
Total Lead	2	mg/kg	1136 10/15/92	1	EPA Method 6010	RJC
Total Zinc	13	mg/kg	1244 10/14/92	.1	EPA Method 6010	RJC
Metals Digestion - 3050 Fl	Digested 50/4		0730 10/08/92		EPA Method 3050 Fl	JHL
Metals Digestion - 7471	Digested 50/1		2000 11/02/92		EPA Method 7471	KDC
Acenaphthene	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
Acenaphthylene	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
Acrolein	ND	ug/kg	1100 10/31/92	100	EPA Method 8240	MIP
Acrylonitrile	ND	ug/kg	1100 10/31/92	100	EPA Method 8240	WJP



Analytical Chemistry • Utility Operations

222097 Continued

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Anthracene	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
Benzene	ND	ug/kg	1100 10/31/92	5.0	EPA Method 8240	WJP
Benzidine	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
Benzo(a)anthracene	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM*
Benzo(a)pyrene	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
Benzo(b)fluoranthene	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
Benzo(ghi)perylene	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
Benzo(k)fluoranthene	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
Bis(2-chloroethyl)ether	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
Bis(2-chloroethoxy)methane	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
Bis(2-chloroisopropyl)ether	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
4-Bromophenyl phenyl ether	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
Bis(2-ethylhexyl)phthalate	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	РМ
Bromoform	ND	ug/kg	1100 10/31/92	5.0	EPA Method 8240	WJP
Bromomethane	ND	ug/kg	1100 10/31/92	10	EPA Method 8240	WJP
4-Chlorophenyl phenyl ether	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
Benzyl butyl phthalate	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
Carbon Tetrachloride	ND	ug/kg	1100 10/31/92	5.0	EPA Method 8240	WJP
Chlorobenzene	ND	ug/kg	1100 10/31/92	5.0	EPA Method 8240	WJP
Chloroethane	ND	ug/kg	1100 10/31/92	10	EPA Method 8240	WJP
2-Chloroethylvinyl ether	ND	ug/kg	1100 10/31/92	10	EPA Method 8240	WJP
Chloroform	ND	ug/kg	1100 10/31/92	5.0	EPA Method 8240	M1b
Chloromethane	ND	ug/kg	1100 10/31/92	10	EPA Method 8240	WJP
2-Chloronaphthalene	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM



Analytical Chemistry • Utility Operations

222097 Continued

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Chrysene	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
Dibenzo(a,h)anthracene	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
Dibromochloromethane	ND	ug/kg	1100 10/31/92	5.0	EPA Method 8240	MIL
1,3-Dichlorobenzene	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
1,2-Dichlorobenzene	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
1,4-Dichlorobenzene	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
3,3'-Dichlorobenzidine	ND	ug/kg	0838 11/04/92	670	EPA Method 8270	PM
Bromodichloromethane	ND	ug/kg	1100 10/31/92	5.0	EPA Method 8240	WJF
1,1-Dichloroethane	ND	ug/kg	1100 10/31/92	5.0	EPA Method 8240	WJF
1,2-Dichloroethane	ND	ug/kg	1100 10/31/92	5.0	EPA Method 8240	MIL
1,1-Dichloroethene	ND	ug/kg	1100 10/31/92	5.0	EPA Method 8240	WJF
trans-1,2-Dichloroethene	ND	ug/kg	1100 10/31/92	5.0	EPA Method 8240	WJF
Dichlorodiflouromethane	ND	ug/kg	1100 10/31/92	1.0	EPA Method 8240	WJF
1,2-Dichloropropane	ND	ug/kg	1100 10/31/92	5.0	EPA Method 8240	MTE
cis-1,3-Dichloropropene	ND	ug/kg	1100 10/31/92	5.0	EPA Method 8240	WJF
Diethyl phthalate	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
Dimethyl phthalate	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
Di-n-butylphthalate	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
Di-n-octylphthalate	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
2,4-Dinitrotoluene	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
2,6-Dinitrotoluene	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
1,2-DPH (as azobenzene)	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
Ethyl benzene	ND	ug/kg	1100 10/31/92	5.0	EPA Method 8240	M1
Fluoranthene	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM



Analytical Chemistry • Utility Operations

222097 Continued

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Fluorene	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
Hexachlorobenzene	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
Hexachlorobutadiene	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
Hexachlorocyclopentadiene	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM *
Hexachloroethane	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
Indeno(1,2,3-cd)pyrene	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
Isophorone	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
Methylene Chloride	ND	ug/kg	1100 10/31/92	5.0	EPA Method 8240	M1b
Naphthalene	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
Nitrobenzene	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
N-nitrosodimethylamine	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
N-Nitrosodi-n-propylamine	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
N-nitrosodiphenylamine	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
Phenanthrene	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
Pyrene	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
1,1,2,2-Tetrachloroethane	ND	ug/kg	1100 10/31/92	5.0	EPA Method 8240	ATA
Tetrachloroethene	ND	ug/kg	1100 10/31/92	5.0	EPA Method 8240	MJP
Toluene	ND	ug/kg	1100 10/31/92	5.0	EPA Method 8240	WJP
1,2,4-Trichlorobenzene	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
1,1,1-Trichloroethane	ND	ug/kg	1100 10/31/92	5.0	EPA Method 8240	MJP
1,1,2-Trichloroethane	ND	ug/kg	1100 10/31/92	5.0	EPA Method 8240	M1b
Trichloroethene	ND	ug/kg	1100 10/31/92	5.0	EPA Method 8240	M7b
Trichlorofluoromethane	ND	ug/kg	1100 10/31/92	10	EPA Method 8240	₩JP
Vinyl Chloride	ND	ug/kg	1100 10/31/92	10	EPA Method 8240	WJP



Analytical Chemistry • Utility Operations

222097 Continued

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PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
trans-1,3-Dichloropropene	ND	ug/kg	1100 10/31/92	5.0	EPA Method 8240	WJP
2-Methylnaphthalene	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
Xylenes	ND	ug/kg	1100 10/31/92	10	EPA Method 8240	M1b

I certify that the results were generated using the above specified methods.



Analytical Chemistry • Utility Operations

11/05/92

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification:

OFB-03-SS1 5-6.7'

Collected By:

Acenaphthene

Acenaphthylene

Acrolein

ND

ND

Date & Time Taken:

10/03/92

Other Data: Tinker AFB, Job # 5735

Bottle Data:

1 -- Unpreserved Plastic/Glass (00)

Lab Sample Number:

222683

Received: 10/07/92

Client: ARS1 PARAMETER RESULTS UNITS ANALYZED EOL METHOD BY Total Sonic Extraction 30->1 g->ml 1518 10/13/92 EPA Method 3550 GΕ Hydrocarbon Sonication Extract. Completed 1330 10/09/92 EPA Method 3550 *MOD JΤ Phenols mg/kg 1700 10/14/92 EPA Method 420.1 WMB Phenol Distillation DISTILLED 1730 10/09/92 EPA Method 420.1 WKC Total Arsenic 0938 11/05/92 EPA Method 6010 mg/kg GDG 240 0938 11/05/92 EPA Method 6010 Total Barium mg/kg .1 GDG Total Cadmium 1.5 mg/kg 0938 11/05/92 .1 EPA Method 6010 GDG Total Chromium 23 mg/kg 0938 11/05/92 .2 EPA Method 6010 GDG Total Mercury mg/kg 1330 10/15/92 .001 EPA Method 7470 LW_ Total Nickel mg/kg 0938 11/05/92 EPA Method 6010 GDG Total Lead 3.2 0938 11/05/92 EPA Method 6010 GDG mg/kg Total Zinc 0938 11/05/92 EPA Method 6010 mg/kg GDG Metals Digestion - 3050 Fl Digested 50/4 A/B/S 0830 10/26/92 EPA Method 3050 Fl JHL Metals Digestion - 7471 Digested 50/1 1600 10/14/92 EPA Method 7471 BWP

ug/kg

ug/kg

ug/kg

2040 10/30/92

2040 10/30/92

1726 10/31/92

330

330

100

EPA Method 8270

EPA Method 8270

EPA Method 8240

PM

PM

PM



Analytical Chemistry • Utility Operations

222683 Continued

		*****	23127 2777	FICT	MEMPOR	DV
PARAMETER	RESULTS	UNITS	ANALYZED 1726 10/31/92	EQL 100	METHOD EPA Method 8240	BY
Acrylonitrile	ND	ug/kg	1720 10/31/92	100	EFA METHOU GETO	F.14
Anthracene	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
Benzene	ND	ug/kg	1726 10/31/92	5.0	EPA Method 8240	PM
Benzidine	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
Benzo(a)anthracene	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
Benzo(a)pyrene	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
Benzo(b)fluoranthene	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
Benzo(ghi)perylene	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
Benzo(k)fluoranthene	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
Bis(2-chloroethyl)ether	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
Bis(2-chloroethoxy)methane	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
Bis(2-chloroisopropyl)ether	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
4-Bromophenyl phenyl ether	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	₽M
Bis(2-ethylhexyl)phthalate	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
Bromoform	ND	ug/kg	1726 10/31/92	5.0	EPA Method 8240	PM
Bromomethane	ND	ug/kg	1726 10/31/92	10	EPA Method 8240	PM
4-Chlorophenyl phenyl ether	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
Benzyl butyl phthalate	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
Carbon Tetrachloride	ND	ug/kg	1726 10/31/92	5.0	EPA Method 8240	PM
Chlorobenzene	ND	ug/kg	1726 10/31/92	5.0	EPA Method 8240	PM
Chloroethane	ND	ug/kg	1726 10/31/92	10	EPA Method 8240	PM
2-Chloroethylvinyl ether	ND	ug/kg	1726 10/31/92	10	EPA Method 8240	PM
Chloroform	ND	ug/kg	1726 10/31/92	5.0	EPA Method 8240	PM
Chloromethane	ND	ug/kg	1726 10/31/92	10	EPA Method 8240	PM
Chloromethane	ND	ug/kg	1726 10/31/92	10	EPA Method 0240	



Analytical Chemistry • Utility Operations

222683 Continued

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	ВУ
2-Chloronaphthalene	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
Chrysene	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
Dibenzo(a,h)anthracene	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
Dibromochloromethane	ND	ug/kg	1726 10/31/92	5.0	EPA Method 8240	PM
1,3-Dichlorobenzene	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
1,2-Dichlorobenzene	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM-
1,4-Dichlorobenzene	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
3,3'-Dichlorobenzidine	ND	ug/kg	2040 10/30/92	670	EPA Method 8270	PM
Bromodichloromethane	ND	ug/kg	1726 10/31/92	5.0	EPA Method 8240	PM
1,1-Dichloroethane	ND	ug/kg	1726 10/31/92	5.0	EPA Method 8240	PM
1,2-Dichloroethane	ND	ug/kg	1726 10/31/92	5.0	EPA Method 8240	PM
1,1-Dichloroethene	ND	ug/kg	1726 10/31/92	5.0	EPA Method 8240	PM
trans-1,2-Dichloroethene	ND	ug/kg	1726 10/31/92	5.0	EPA Method 8240	PM
Dichlorodiflouromethane	ND	ug/kg	1726 10/31/92	1.0	EPA Method 8240	PM
1,2-Dichloropropane	ND	ug/kg	1726 10/31/92	5.0	EPA Method 8240	PM
cis-1,3-Dichloropropene	ND	ug/kg	1726 10/31/92	5.0	EPA Method 8240	PM.
Diethyl phthalate	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
Dimethyl phthalate	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
Di-n-butylphthalate	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
Di-n-octylphthalate	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
2,4-Dinitrotoluene	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
2,6-Dinitrotoluene	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
1,2-DPH (as azobenzene)	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
Ethyl benzene	ND	ug/kg	1726 10/31/92	5.0	EPA Method 8240	PM



Analytical Chemistry • Utility Operations

222683 Continued

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Fluoranthene	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
Fluorene	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
Hexachlorobenzene	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
Hexachlorobutadiene	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
Hexachlorocyclopentadiene	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	РМ
Hexachloroethane	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
Indeno(1,2,3-cd)pyrene	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
Isophorone	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
Methylene Chloride	ND	ug/kg	1726 10/31/92	5.0	EPA Method 8240	PM
Naphthalene	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
Nitrobenzene	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
N-nitrosodimethylamine	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
N-Nitrosodi-n-propylamine	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
N-nitrosodiphenylamine	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
Phenanthrene	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
Pyrene	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
1,1,2,2-Tetrachloroethane	ND	ug/kg	1726 10/31/92	5.0	EPA Method 8240	PM
Tetrachloroethene	ND	ug/kg	1726 10/31/92	5.0	EPA Method 8240	PM
Toluene	34	ug/kg	1726 10/31/92	5.0	EPA Method 8240	PM
1,2,4-Trichlorobenzene	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
1,1,1-Trichloroethane	ND	ug/kg	1726 10/31/92	5.0	EPA Method 8240	PM
1,1,2-Trichloroethane	ND	ug/kg	1726 10/31/92	5.0	EPA Method 8240	PM
Trichloroethene	ND	ug/kg	1726 10/31/92	5.0	EPA Method 8240	PM
Trichlorofluoromethane	ND	ug/kg	1726 10/31/92	10	EPA Method 8240	PM



Analytical Chemistry • Utility Operations

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PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Vinyl Chloride	ND	ug/kg	1726 10/31/92	10	EPA Method 8240	PM
trans-1,3-Dichloropropene	ND	ug/kg	1726 10/31/92	5.0	EPA Method 8240	PM
2-Methylnaphthalene	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
Xylenes	16	ug/kg	1726 10/31/92	10	EPA Method 8240	PM
Total Petroleum Hydrocarbons	56	mg/kg	1200 10/10/92	10	EPA Method 418.1	TEO

I certify that the results were generated using the above specified methods.



Analytical Chemistry • Utility Operations

11/05/92

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification:

OFB-04-SS1 4.0-5.6'

Collected By:

Date & Time Taken:

10/03/92

Other Data: Tinker AFB, Job # 5735

Bottle Data: 1 -- Unpreserved Plastic/Glass (00)

Lab Sample Number: 222687 Received: 10/07/92 Client: ARS1

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Total Sonic Extraction	30->1	g->ml	1540 10/13/92		EPA Method 3550	DDM
Hydrocarbon Sonication Extract.	Completed		1330 10/09/92		EPA Method 3550 *MOD	IL
Phenols	ND	mg/kg	1700 10/14/92	5	EPA Method 420.1	WMB
Phenol Distillation	DISTILLED		1800 10/13/92		EPA Method 420.1	CRH
Total Arsenic	ND	mg/kg	0938 11/05/92	1	EPA Method 6010	GDG
Total Barium	130	mg/kg	0938 11/05/92	.1	EPA Method 6010	GDG
Total Cadmium	.98	mg/kg	0938 11/05/92	.1	EPA Method 6010	GDG
Total Chromium	16	mg/kg	0938 11/05/92	.2	EPA Method 6010	GDG
. Total Mercury	ND	mg/kg	1330 10/15/92	.001	EPA Method 7470	LW
Total Nickel	8.5	mg/kg	0938 11/05/92	.6	EPA Method 6010	GDG
• Total Lead	8.4	mg/kg	0938 11/05/92	1	EPA Method 6010	GDG
Total Zinc	22	mg/kg	0938 11/05/92	.1	EPA Method 6010	GDG
Metals Digestion - 3050 Fl	Digested 50/4		0830 10/26/92		EPA Method 3050 Fl	JHL
Metals Digestion - 7471	Digested 50/1		1600 10/14/92		EPA Method 7471	BWP
Acenaphthene	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
Acenaphthylene	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
Anthracene	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM



Analytical Chemistry • Utility Operations

222687 Continued

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Benzidine	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
Benzo(a)anthracene	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
Benzo(a)pyrene	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
Benzo(b)fluoranthene	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
Benzo(ghi)perylene	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
Benzo(k)fluoranthene	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM-
Bis(2-chloroethyl)ether	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
Bis(2-chloroethoxy)methane	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
Bis(2-chloroisopropyl)ether	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
4-Bromophenyl phenyl ether	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
Bis(2-ethylhexyl)phthalate	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	РМ
4-Chlorophenyl phenyl ether	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
Benzyl butyl phthalate	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	РМ
2-Chloronaphthalene	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
Chrysene	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
Dibenzo(a,h)anthracene	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM.
1,3-Dichlorobenzene	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
1,2-Dichlorobenzene	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM*
1,4-Dichlorobenzene	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
3,3'-Dichlorobenzidine	ND	ug/kg	2127 11/02/92	670	EPA Method 8270	PM
Diethyl phthalate	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
Dimethyl phthalate	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
Di-n-butylphthalate	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
Di-n-octylphthalate	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM



Analytical Chemistry • Utility Operations

222687 Continued

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PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
2,4-Dinitrotoluene	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
2,6-Dinitrotoluene	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
1,2-DPH (as azobenzene)	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
Fluoranthene	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
Fluorene	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
Hexachlorobenzene	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
Hexachlorobutadiene	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
Hexachlorocyclopentadiene	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
Hexachloroethane	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
Indeno(1,2,3-cd)pyrene	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
Isophorone	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
Naphthalene	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
Nitrobenzene	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
N-nitrosodimethylamine	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
N-Nitrosodi-n-propylamine	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
N-nitrosodiphenylamine	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
Phenanthrene	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
Pyrene	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
1,2,4-Trichlorobenzene	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
2-Methylnaphthalene	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
Total Petroleum Hydrocarbons	19	mg/kg	1200 10/10/92	10	EPA Method 418.1	TEO

I certify that the results were generated using the above specified methods.



Analytical Chemistry • Utility Operations

11/05/92

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification: OFB-04-SS2 5.6-7.4'

Collected By:

JPJ

Date & Time Taken:

10/03/92

Other Data: Tinker AFB, Job # 5735

Bottle Data: 1 -- Unpreserved Plastic/Glass (00)

Lab Sample Number: 222686 Received: 10/07/92

Client: ARS1

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Total Sonic Extraction	30->1	g->ml	1458 10/13/92		EPA Method 3550	GE
Hydrocarbon Sonication Extract.	Completed		1330 10/09/92		EPA Method 3550 *MOD	JT
Phenols	ND	mg/kg	1700 10/14/92	5	EPA Method 420.1	WMI
Phenol Distillation	DISTILLED		1730 10/09/92		EPA Method 420.1	WK
Total Arsenic	ND	mg/kg	0938 11/05/92	1	EPA Method 6010	GD
Total Barium	140	mg/kg	0938 11/05/92	.1	EPA Method 6010	GD
otal Cadmium	1.6	mg/kg	0938 11/05/92	.1	EPA Method 6010	GD
otal Chromium	16	mg/kg	0938 11/05/92	.2	EPA Method 6010	GD
Total Mercury	ND	mg/kg	1330 10/15/92	.001	EPA Method 7470	LW
otal Nickel	7.4	mg/kg	0938 11/05/92	.6	EPA Method 6010	GD
otal Lead	2.0	mg/kg	0938 11/05/92	1	EPA Method 6010	GD
otal Zinc	12	mg/kg	0938 11/05/92	.1	EPA Method 6010	GD
Metals Digestion - 3050 Fl	Digested 50/4	A/B/S	0830 10/26/92		EPA Method 3050 Fl	JHI
Metals Digestion - 7471	Digested 50/1		1600 10/14/92		EPA Method 7471	BWF
Acenaphthene	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
Acenaphthylene	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
Acrolein	ND	ug/kg	0601 10/31/92	100	EPA Method 8240	PM



Analytical Chemistry • Utility Operations

222686 Continued

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Acrylonitrile	ND	ug/kg	0601 10/31/92	100	EPA Method 8240	PM
Anthracene	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
Benzene	ND	ug/kg	0601 10/31/92	5.0	EPA Method 8240	PM
Benzidine	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
Benzo(a)anthracene	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
Benzo(a)pyrene	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
Benzo(b)fluoranthene	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
Benzo(ghi)perylene	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
Benzo(k)fluoranthene	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
Bis(2-chloroethyl)ether	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
Bis(2-chloroethoxy)methane	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
Bis(2-chloroisopropyl)ether	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
4-Bromophenyl phenyl ether	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
Bis(2-ethylhexyl)phthalate	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
Bromoform	ND	ug/kg	0601 10/31/92	5.0	EPA Method 8240	PM
Bromomethane	ND	ug/kg	0601 10/31/92	10	EPA Method 8240	PM
4-Chlorophenyl phenyl ether	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
Benzyl butyl phthalate	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
Carbon Tetrachloride	ND	ug/kg	0601 10/31/92	5.0	EPA Method 8240	PM
Chlorobenzene	ND	ug/kg	0601 10/31/92	5.0	EPA Method 8240	PM
Chloroethane	ND	ug/kg	0601 10/31/92	10	EPA Method 8240	PM
2-Chloroethylvinyl ether	ND	ug/kg	0601 10/31/92	10	EPA Method 8240	PM
Chloroform	ND	ug/kg	0601 10/31/92	5.0	EPA Method 8240	PM
Chloromethane	ND	ug/kg	0601 10/31/92	10	EPA Method 8240	PM



Analytical Chemistry • Utility Operations

11/05/92

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PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
2-Chloronaphthalene	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
Chrysene	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
Dibenzo(a,h)anthracene	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
Dibromochloromethane	ND	ug/kg	0601 10/31/92	5.0	EPA Method 8240	PM
1,3-Dichlorobenzene	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
1,2-Dichlorobenzene	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	P M ~
1,4-Dichlorobenzene	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
3,3'-Dichlorobenzidine	ND	ug/kg	1539 11/03/92	670	EPA Method 8270	PM
Bromodichloromethane	ND	ug/kg	0601 10/31/92	5.0	EPA Method 8240	PM
1,1-Dichloroethane	ND	ug/kg	0601 10/31/92	5.0	EPA Method 8240	PM
1,2-Dichloroethane	ND	ug/kg	0601 10/31/92	5.0	EPA Method 8240	PM
1,1-Dichloroethene	ND	ug/kg	0601 10/31/92	5.0	EPA Method 8240	PM
trans-1,2-Dichloroethene	ND	ug/kg	0601 10/31/92	5.0	EPA Method 8240	PM
Dichlorodiflouromethane	ND	ug/kg	0601 10/31/92	1.0	EPA Method 8240	PM
1,2-Dichloropropane	ND	ug/kg	0601 10/31/92	5.0	EPA Method 8240	PM
cis-1,3-Dichloropropene	ND	ug/kg	0601 10/31/92	5.0	EPA Method 8240	PM •
Diethyl phthalate	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
Dimethyl phthalate	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM *
Di-n-butylphthalate	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
Di-n-octylphthalate	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
2,4-Dinitrotoluene	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
2,6-Dinitrotoluene	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
1,2-DPH (as azobenzene)	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
Ethyl benzene	ND	ug/kg	0601 10/31/92	5.0	EPA Method 8240	PM



Analytical Chemistry • Utility Operations

11/05/92

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PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Fluoranthene	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
Fluorene	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
Hexachiorobenzene	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
Hexachlorobutadiene	NĎ	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
Hexachlorocyclopentadiene	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
Hexachloroethane	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
Indeno(1,2,3-cd)pyrene	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
Isophorone	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
Methylene Chloride	ND	ug/kg	0601 10/31/92	5.0	EPA Method 8240	PM
Naphthalene	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
Nitrobenzene	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
N-nitrosodimethylamine	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
N-Nitrosodi-n-propylamine	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
N-nitrosodiphenylamine	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
Phenanthrene	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
Pyrene	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
1,1,2,2-Tetrachloroethane	ND	ug/kg	0601 10/31/92	5.0	EPA Method 8240	PM
Tetrachloroethene	ND	ug/kg	0601 10/31/92	5.0	EPA Method 8240	PM
Toluene	17	ug/kg	0601 10/31/92	5.0	EPA Method 8240	PM
1,2,4-Trichlorobenzene	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
1,1,1-Trichloroethane	ND	ug/kg	0601 10/31/92	5.0	EPA Method 8240	PM
1,1,2-Trichloroethane	ND	ug/kg	0601 10/31/92	5.0	EPA Method 8240	PM
Trichloroethene	ND	ug/kg	0601 10/31/92	5.0	EPA Method 8240	PM
Trichlorofluoromethane	ND	ug/kg	0601 10/31/92	10	EPA Method 8240	PM



Analytical Chemistry • Utility Operations

222686 Continued

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PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Vinyl Chloride	ND	ug/kg	0601 10/31/92	10	EPA Method 8240	PM
trans-1,3-Dichloropropene	ND	ug/kg	0601 10/31/92	5.0	EPA Method 8240	PM
2-Methylnaphthalene	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
Xylenes	ND	ug/kg	0601 10/31/92	10	EPA Method 8240	PM
Total Petroleum Hydrocarbons	29	mg/kg	1200 10/10/92	10	EPA Method 418.1	TEO

I certify that the results were generated using the above specified methods.

APPENDIX O

TCLP ANALYSES OF COMPOSITED FROM SAMPLES AND FRAC TANK RINSATE



Analytical Chemistry • Utility Operations

11/06/92

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification:

DSW-1 FPA Comp Dr 1,3,8

Collected By:

Date & Time Taken:

10/06/92 1718

Other Data: Tinker AFB, Job # 5735

Bottle Data: 1 -- Unpreserved Plastic/Glass (00)

Lab Sample Number: 222697 Received: 10/07/92 Client: ARS1

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
TCLP Liquid-Liquid Extraction	1000->1	mt->mt	1250 11/02/92		EPA Method 3510	GE
TCLP ZHE Volatile Extraction	100.0% Sol	Completed.	1500 10/14/92		EPA Method 1311	LM
TCLP Extraction	Solid/Ext#1		1625 10/20/92		EPA Method 1311	RJH
Hydrocarbon Sonication Extract.	Completed		1130 10/10/92		EPA Method 3550 *MOD	TEO
TCLP Benzene (Reg. Limit 0.5)	ND	mg/l	2121 11/02/92	0.005	EPA Method 8240-TCLP	₽M
TCLP Carbon Tetrachloride (.5)	ND	mg/l	2121 11/02/92	0.005	EPA Method 8240-TCLP	₽₩
TCLP Chlorobenzene (Limit 100)	ND	mg/l	2121 11/02/92	0.005	EPA Method 8240-TCLP	PM
TCLP Chloroform (Reg. Limit 6.0)	ND	mg/l	2121 11/02/92	0.005	EPA Method 8240-TCLP	PM
TCLP 1,4 Dichlorobenzene: RL 7.5	ND	mg/l	1159 11/06/92	0.01	EPA Method 8270-TCLP	PM
TCLP 1,2-Dichloroethane (RL .5)	ND	mg/l	2121 11/02/92	0.005	EPA Method 8240-TCLP	PM
TCLP 1,1-Dichloroethene (.7)	ND	mg/l	2121 11/02/92	0.005	EPA Method 8240-TCLP	FM
TCLP 2,4-Dinitrotoluene (.13)	ND	mg/l	1159 11/06/92	0.01	EPA Method 8270-TCLP	₽₩
TCLP Hexachlorobenzene (.13)	ND	mg/l	1159 11/06/92	0.05	EPA Method 8270-TCLP	PM
TCLP Hexachlorobutadiene (.5)	ND	mg/l	1159 11/06/92	0.01	EPA Method 8270-TCLP	PM
TCLP Hexachlorethane (Limit 3)	ND	mg/l	1159 11/06/92	0.01	EPA Method 8270-TCLP	PM
TCLP Nitrobenzene (Limit 2)	ND	mg/l	1159 11/06/92	0.01	EPA Method 8270-TCLP	PM
TCLP Pentachlorophenol (100)	ND	mg/l	1159 11/06/92	0.01	EPA Method 8270-TCLP	PM



Analytical Chemistry • Utility Operations

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DADAMEMED	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
PARAMETER TCLP Tetrachloroethylene (.7)	ND	mg/l	2121 11/02/92	0.005	EPA Method 8240-TCLP	PM
TCLP Trichloroethylene (.5)	ND	mg/l	2121 11/02/92	0.005	EPA Method 8240-TCLP	PM
TCLP 2,4,6-Trichlorophenol (2)	ND	mg/l	1159 11/06/92	0.01	EPA Method 8270-TCLP	PM
TCLP Vinyl Chloride (.2)	ND	mg/l	2121 11/02/92	0.01	EPA Method 8240-TCLP	PM
TCLP 2,4,5-Trichlorophenol (400)	ND	mg/l	1159 11/06/92	0.01	EPA Method 8270-TCLP	PM
TCLP Cresol (Reg. Limit 1)	ND	mg/l	1159 11/06/92	0.01	EPA Method 8270-TCLP	PM
TCLP MEK (Reg. Limit 200)	ND	mg/l	2121 11/02/92	0.05	EPA Method 8240-TCLP	PM
TCLP Pyridine (Reg. Limit 5)	ND	mg/l	1159 11/06/92	0.01	EPA Method 8270-TCLP	PM
Total Petroleum Hydrocarbons	860	mg/kg	1200 10/10/92	10	EPA Method 418.1	TEO
Metals Digestion TCLP 3010	Digested	a/b/s	2200 10/22/92		EPA Method 3010	KDC
Metals Digestion - TCLP 7470	Digested	A/B/S	2200 10/23/92		EPA Method 7470	KDC
TCLP Silver (Reg. Limit 5.0)	ND	mg/l	1749 10/26/92	.01	EPA Method 6010	GDG
TCLP Arsenic (Reg. Limit 5.0)	ND	mg/l	1749 10/26/92	.2	EPA Method 6010	GDG
TCLP Barium (Reg. Limit 100.0)	1.7	mg/l	1749 10/26/92	1.0	EPA Method 6010	GDG
TCLP Cadmium (Reg. Limit 1.0)	ND	mg/l	1749 10/26/92	.01	EPA Method 6010	GDG
TCLP Chromium (Reg. Limit 5.0)	ND	mg/l	1749 10/26/92	.02	EPA Method 6010	GDG
TCLP Mercury (Reg. Limit 0.2)	ND	mg/l	1515 11/06/92	.05	EPA Method 7470	RJC
TCLP Lead (Reg. Limit 5.0)	ND	mg/l	1749 10/26/92	.1	EPA Method 6010	GDG
TCLP Selenium (Reg. Limit 1.0)	ND	mg/l	0926 10/27/92	.2	EPA Method 6010	RJC

Reported results for TCLP analysis are corrected upward to reflect matrix spike recoveries.

I certify that the results were generated using the above specified methods.



Analytical Chemistry • Utility Operations

11/06/92

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification:

DSW-2 WTP/OSC Comp Dr 1,5,6

Collected By:

Date & Time Taken:

10/06/92 1725

Other Data: Tinker AFB, Job # 5735

Bottle Data: 1 -- Unpreserved Plastic/Glass (00)

Lab Sample Number: 222699 Received: 10/07/92

Client: ARS1

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
TCLP Liquid-Liquid Extraction	1000->1	ml->ml	1530 10/22/92		EPA Method 3510	GE
TCLP ZHE Volatile Extraction	100.0% Sol	Completed.	1430 10/15/92		EPA Method 1311	LM
TCLP Extraction	Solid/Ext#1		1615 10/20/92		EPA Method 1311	RJH
Hydrocarbon Sonication Extract.	Completed		1130 10/10/92		EPA Method 3550 *MOD	TEO
TCLP Benzene (Reg. Limit 0.5)	.019	mg/l	1802 11/03/92	0.005	EPA Method 8240-TCLP	PM
TCLP Carbon Tetrachloride (.5)	ND	mg/l	1802 11/03/92	0.005	EPA Method 8240-TCLP	PM
TCLP Chlorobenzene (Limit 100)	ND	mg/l	1802 11/03/92	0.005	EPA Method 8240-TCLP	РМ
TCLP Chloroform (Reg. Limit 6.0)	ND	mg/l	1802 11/03/92	0.005	EPA Method 8240-TCLP	PM
TCLP 1,4 Dichlorobenzene: RL 7.5	ND	mg/l	2345 11/05/92	0.01	EPA Method 8270-TCLP	РM
TCLP 1,2-Dichloroethane (RL .5)	ND	mg/l	1802 11/03/92	0.005	EPA Method 8240-TCLP	PM
TCLP 1,1-Dichloroethene (.7)	ND .	mg/l	1802 11/03/92	0.005	EPA Method 8240-TCLP	PM
TCLP 2,4-Dinitrotoluene (.13)	ND	mg/l	2345 11/05/92	0.01	EPA Method 8270-TCLP	PM
TCLP Hexachlorobenzene (.13)	ND	mg/l	2345 11/05/92	0.05	EPA Method 8270-TCLP	PM
TCLP Hexachlorobutadiene (.5)	ND	mg/l	2345 11/05/92	0.01	EPA Method 8270-TCLP	PM
TCLP Hexachlorethane (Limit 3)	ND	mg/l	2345 11/05/92	0.01	EPA Method 8270-TCLP	PM
TCLP Nitrobenzene (Limit 2)	ND	mg/l	2345 11/05/92	0.01	EPA Method 8270-TCLP	PM
TCLP Pentachlorophenol (100)	ND	mg/l	2345 11/05/92	0.01	EPA Method 8270-TCLP	PM



Analytical Chemistry • Utility Operations

222699 Continued

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PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
TCLP Tetrachloroethylene (.7)	ND	mg/l	1802 11/03/92	0.005	EPA Method 8240-TCLP	PM
TCLP Trichloroethylene (.5)	ND	mg/l	1802 11/03/92	0.005	EPA Method 8240-TCLP	PM
TCLP 2,4,6-Trichlorophenol (2)	ND	mg/l	2345 11/05/92	0.01	EPA Method 8270-TCLP	PM
TCLP Vinyl Chloride (.2)	ND	mg/l	1802 11/03/92	0.01	EPA Method 8240-TCLP	PM
TCLP 2,4,5-Trichlorophenol (400)	ND	mg/l	2345 11/05/92	0.01	EPA Method 8270-TCLP	PM
TCLP Cresol (Reg. Limit 1)	ND	mg/l	2345 11/05/92	0.01	EPA Method 8270-TCLP	PM
TCLP MEK (Reg. Limit 200)	ND	mg/l	1802 11/03/92	0.05	EPA Method 8240-TCLP	PM
TCLP Pyridine (Reg. Limit 5)	ND	mg/l	2345 11/05/92	0.01	EPA Method 8270-TCLP	PM
Total Petroleum Hydrocarbons	120	mg/kg	1200 10/10/92	10	EPA Method 418.1	TEO
Metals Digestion TCLP 3010	Digested	a/s	2200 10/22/92		EPA Method 3010	KDC
Metals Digestion - TCLP 7470	Digested	A/S	2200 10/23/92		EPA Method 7470	KDC
TCLP Silver (Reg. Limit 5.0)	ND	mg/l	1749 10/26/92	.01	EPA Method 6010	GDG
TCLP Arsenic (Reg. Limit 5.0)	ND	mg/l	1749 10/26/92	.2	EPA Method 6010	GDG
TCLP Barium (Reg. Limit 100.0)	5.0	mg/l	1749 10/26/92	1.0	EPA Method 6010	GDG
TCLP Cadmium (Reg. Limit 1.0)	ND	mg/l	1749 10/26/92	.01	EPA Method 6010	GDG
TCLP Chromium (Reg. Limit 5.0)	ND	mg/l	1749 10/26/92	.02	EPA Method 6010	GDG
TCLP Mercury (Reg. Limit 0.2)	.03	mg/l	1515 11/06/92	.001	EPA Method 7470	RJC
TCLP Lead (Reg. Limit 5.0)	ND	mg/l	1749 10/26/92	.1	EPA Method 6010	GDG
TCLP Selenium (Reg. Limit 1.0)	ND	mg/l	0926 10/27/92	.2	EPA Method 6010	RJC

Reported results for TCLP analysis are corrected upward to reflect matrix spike recoveries.

I certify that the results were generated using the above specified methods.



Analytical Chemistry • Utility Operations

11/06/92

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification:

DSW-3 WTP/OSC Drum 5

Collected By:

Date & Time Taken:

10/06/92 1725

Other Data: Tinker AFB, Job # 5735

Bottle Data: 1 -- Unpreserved Plastic/Glass (00)

Lab Sample Number: 222701 Received: 10/07/92

Client: ARS1

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
TCLP Liquid-Liquid Extraction	1000->1	ml->ml	1510 10/22/92	- = =	EPA Method 3510	GE
TCLP ZHE Volatile Extraction	100.0% Sol	Completed.	1430 10/16/92		EPA Method 1311	LM
TCLP Extraction	Solid/Ext#1		1540 10/20/92		EPA Method 1311	RJH
Hydrocarbon Sonication Extract.	Completed		1130 10/10/92		EPA Method 3550 *MOD	TEO
TCLP Benzene (Reg. Limit 0.5)	ND	mg/l	2305 11/03/92	0.005	EPA Method 8240-TCLP	PM
TCLP Carbon Tetrachloride (.5)	ND	mg/l	2305 11/03/92	0.005	EPA Method 8240-TCLP	PM
TCLP Chlorobenzene (Limit 100)	ND	mg/l	2305 11/03/92	0.005	EPA Method 8240-TCLP	PM
TCLP Chloroform (Reg. Limit 6.0)	ND	mg/l	2305 11/03/92	0.005	EPA Method 8240-TCLP	PM
TCLP 1,4 Dichlorobenzene: RL 7.5	ND	mg/l	2254 11/05/92	0.01	EPA Method 8270-TCLP	PM
TCLP 1,2-Dichloroethane (RL .5)	ND	mg/l	2305 11/03/92	0.005	EPA Method 8240-TCLP	PM
TCLP 1,1-Dichloroethene (.7)	.007	mg/l	2305 11/03/92	0.005	EPA Method 8240-TCLP	PM
TCLP 2,4-Dinitrotoluene (.13)	ND	mg/l	2254 11/05/92	0.01	EPA Method 8270-TCLP	PM
TCLP Hexachlorobenzene (.13)	ND	mg/l	2254 11/05/92	0.05	EPA Method 8270-TCLP	PM
TCLP Hexachlorobutadiene (.5)	ND	mg/l	2254 11/05/92	0.01	EPA Method 8270-TCLP	PM
TCLP Hexachlorethane (Limit 3)	ND	mg/l	2254 11/05/92	0.01	EPA Method 8270-TCLP	PM
TCLP Nitrobenzene (Limit 2)	ND	mg/l	2254 11/05/92	0.01	EPA Method 8270-TCLP	PM
TCLP Pentachlorophenol (100)	ND	mg/l	2254 11/05/92	0.01	EPA Method 8270-TCLP	PM



Analytical Chemistry • Utility Operations

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PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
TCLP Tetrachloroethylene (.7)	ND	mg/t	2305 11/03/92	0.005	EPA Method 8240-TCLP	PM
TCLP Trichloroethylene (.5)	ND	mg/l	2305 11/03/92	0.005	EPA Method 8240-TCLP	PM
TCLP 2,4,6-Trichlorophenol (2)	ND	mg/l	2254 11/05/92	0.01	EPA Method 8270-TCLP	PM
TCLP Vinyl Chloride (.2)	ND	mg/l	2305 11/03/92	0.01	EPA Method 8240-TCLP	PM
TCLP 2,4,5-Trichlorophenol (400)	ND	mg/l	2254 11/05/92	0.01	EPA Method 8270-TCLP	PM
TCLP Cresol (Reg. Limit 1)	ND	mg/l	2254 11/05/92	0.01	EPA Method 8270-TCLP	PM
TCLP MEK (Reg. Limit 200)	ND	mg/l	2305 11/03/92	0.05	EPA Method 8240-TCLP	PM
TCLP Pyridine (Reg. Limit 5)	ND	mg/l	2254 11/05/92	0.01	EPA Method 8270-TCLP	PM
Total Petroleum Hydrocarbons	83	mg/kg	1200 10/10/92	10	EPA Method 418.1	TEO
Metals Digestion TCLP 3010	Digested	a/s	2200 10/22/92		EPA Method 3010	KDC
Metals Digestion - TCLP 7470	Digested	A/S	2200 10/23/92		EPA Method 7470	KDC
TCLP Silver (Reg. Limit 5.0)	ND	mg/l	1749 10/26/92	.01	EPA Method 6010	GDG
TCLP Arsenic (Reg. Limit 5.0)	ND	mg/l	1749 10/26/92	.2	EPA Method 6010	GDG
TCLP Barium (Reg. Limit 100.0)	3.2	mg/l	1749 10/26/92	1.0	EPA Method 6010	GDG
TCLP Cadmium (Reg. Limit 1.0)	.01	mg/l	1749 10/26/92	.01	EPA Method 6010	GDG
TCLP Chromium (Reg. Limit 5.0)	ND	mg/l	1749 10/26/92	.02	EPA Method 6010	GDG
TCLP Mercury (Reg. Limit 0.2)	ND	mg/l	1515 11/06/92	.001	EPA Method 7470	RJC
TCLP Lead (Reg. Limit 5.0)	ND	mg/l	1749 10/26/92	.1	EPA Method 6010	GDG
TCLP Selenium (Reg. Limit 1.0)	ND	mg/l	0926 10/27/92	.2	EPA Method 6010	RJC

Reported results for TCLP analysis are corrected upward to reflect matrix spike recoveries.

I certify that the results were generated using the above specified methods.



Analytical Chemistry • Utility Operations

11/06/92

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification: DSW-4 FTA Comp Dr 1,2

Collected By: JPJ

Date & Time Taken:

10/06/92 1730

Other Data: Tinker AFB, Job # 5735

Bottle Data: 1 -- Unpreserved Plastic/Glass (00)

Client: ARS1 Lab Sample Number: 222702 Received: 10/07/92

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
TCLP Liquid-Liquid Extraction	1000->1	ml->ml	2112 10/23/92		EPA Method 3510	LM
TCLP ZHE Volatile Extraction	100.0% Sol	Completed.	1430 10/16/92		EPA Method 1311	LM
TCLP Extraction	Solid/Ext#1		1525 10/21/92		EPA Method 1311	LD
Hydrocarbon Sonication Extract.	Completed		1130 10/10/92		EPA Method 3550 *MOD	TEO
TCLP Benzene (Reg. Limit 0.5)	ND	mg/l	0121 11/04/92	0.005	EPA Method 8240-TCLP	PM
TCLP Carbon Tetrachloride (.5)	ND	mg/l	0121 11/04/92	0.005	EPA Method 8240-TCLP	PM
TCLP Chlorobenzene (Limit 100)	ND	mg/l	0121 11/04/92	0.005	EPA Method 8240-TCLP	PM
TCLP Chloroform (Reg. Limit 6.0)	ND	mg/l	0121 11/04/92	0.005	EPA Method 8240-TCLP	PM
TCLP 1,4 Dichlorobenzene: RL 7.5	ND	mg/l	2154 11/05/92	0.01	EPA Method 8270-TCLP	PM
TCLP 1,2-Dichloroethane (RL .5)	ND	mg/l ·	0121 11/04/92	0.005	EPA Method 8240-TCLP	PM
TCLP 1,1-Dichloroethene (.7)	ND	mg/l	0121 11/04/92	0.005	EPA Method 8240-TCLP	PM
TCLP 2,4-Dinitrotoluene (.13)	ND .	mg/l	2154 11/05/92	0.01	EPA Method 8270-TCLP	PM
TCLP Hexachlorobenzene (.13)	ND	mg/l	2154 11/05/92	0.05	EPA Method 8270-TCLP	PM
TCLP Hexachlorobutadiene (.5)	ND	mg/l	2154 11/05/92	0.01	EPA Method 8270-TCLP	PM
TCLP Hexachlorethane (Limit 3)	ND	mg/l	2154 11/05/92	0.01	EPA Method 8270-TCLP	PM
TCLP Nitrobenzene (Limit 2)	ND	mg/l	2154 11/05/92	0.01	EPA Method 8270-TCLP	PM
TCLP Pentachlorophenol (100)	ND	mg/l	2154 11/05/92	0.01	EPA Method 8270-TCLP	PM



Analytical Chemistry • Utility Operations

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PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
TCLP Tetrachloroethylene (.7)	ND	mg/l	0121 11/04/92	0.005	EPA Method 8240-TCLP	PM
TCLP Trichloroethylene (.5)	ND	mg/l	0121 11/04/92	0.005	EPA Method 8240-TCLP	PM
TCLP 2,4,6-Trichlorophenol (2)	ND	mg/l	2154 11/05/92	0.01	EPA Method 8270-TCLP	PM
TCLP Vinyl Chloride (.2)	ND	mg/l	0121 11/04/92	0.01	EPA Method 8240-TCLP	PM
TCLP 2,4,5-Trichlorophenol (400)	ND	mg/l	2154 11/05/92	0.01	EPA Method 8270-TCLP	PM
TCLP Cresol (Reg. Limit 1)	ND	mg/l	2154 11/05/92	0.01	EPA Method 8270-TCLP	PM
TCLP MEK (Reg. Limit 200)	ND	mg/l	0121 11/04/92	. 0.05	EPA Method 8240-TCLP	PM
TCLP Pyridine (Reg. Limit 5)	ND	mg/l	2154 11/05/92	0.01	EPA Method 8270-TCLP	PM
Total Petroleum Hydrocarbons	1900	mg/kg	1200 10/10/92	100	EPA Method 418.1	TEO
Metals Digestion TCLP 3010	Digested	a/s	2200 10/22/92		EPA Method 3010	KDC
Metals Digestion - TCLP 7470	Digested	A/S	2200 10/23/92		EPA Method 7470	KDC
TCLP Silver (Reg. Limit 5.0)	ND	mg/l	1749 10/26/92	.01	EPA Method 6010	GDG
TCLP Arsenic (Reg. Limit 5.0)	ND	mg/l	1749 10/26/92	.2	EPA Method 6010	GDG
TCLP Barium (Reg. Limit 100.0)	2.5	mg/l	1749 10/26/92	1.0	EPA Method 6010	GDG
TCLP Cadmium (Reg. Limit 1.0)	ND	mg/l	1749 10/26/92	.01	EPA Method 6010	GDG
TCLP Chromium (Reg. Limit 5.0)	ND	mg/l	1749 10/26/92	.02	EPA Method 6010	GDG
TCLP Mercury (Reg. Limit 0.2)	ND	mg/l	1515 11/06/92	.001	EPA Method 7470	RJC
TCLP Lead (Reg. Limit 5.0)	ND	mg/l	1749 10/26/92	.1	EPA Method 6010	GDG
TCLP Selenium (Reg. Limit 1.0)	ND	mg/l	0926 10/27/92	.2	EPA Method 6010	RJC

Reported results for TCLP analysis are corrected upward to reflect matrix spike recoveries.

I certify that the results were generated using the above specified methods.



Analytical Chemistry • Utility Operations

11/06/92

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification: DSW-5 OFB Comp Dr 1,2

Collected By: JPJ

Date & Time Taken:

10/06/92 1735

Other Data: Tinker AFB, Job # 5735

Bottle Data: 1 -- Unpreserved Plastic/Glass (00)

Lab Sample Number: 222703 Received: 10/07/92 Client: ARS1

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
TCLP Liquid-Liquid Extraction	1000->1	ml->ml	1721 10/22/92		EPA Method 3510	EM
TCLP ZHE Volatile Extraction	100.0% Sol	Completed.	1700 10/17/92		EPA Method 1311	EM
TCLP Extraction	Solid/Ext#1		1515 10/21/92		EPA Method 1311	102
Hydrocarbon Sonication Extract.	Completed		1130 10/10/92		EPA Method 3550 *MOD	TEO
TCLP Benzene (Reg. Limit 0.5)	ND	mg/l	0013 11/04/92	0.005	EPA Method 8240-TCLP	PM
TCLP Carbon Tetrachloride (.5)	ND	mg/l	0013 11/04/92	0.005	EPA Method 8240-TCLP	PM
TCLP Chlorobenzene (Limit 100)	ND	mg/l	0013 11/04/92	0.005	EPA Method 8240-TCLP	PM
TCLP Chloroform (Reg. Limit 6.0)	ND	mg/l	0013 11/04/92	0.005	EPA Method 8240-TCLP	PM
TCLP 1,4 Dichlorobenzene: RL 7.5	ND	mg/l	0441 11/05/92	0.01	EPA Method 8270-TCLP	ΡM
TCLP 1,2-Dichloroethane (RL .5)	ND	mg/l	0013 11/04/92	0.005	EPA Method 8240-TCLP	PM
TCLP 1,1-Dichloroethene (.7)	ND	mg/l	0013 11/04/92	0.005	EPA Method 8240-TCLP	PM
TCLP 2,4-Dinitrotoluene (.13)	ND	mg/l	0441 11/05/92	0.01	EPA Method 8270-TCLP	PM
TCLP Hexachlorobenzene (.13)	ND	mg/l	0441 11/05/92	0.05	EPA Method 8270-TCLP	PM
TCLP Hexachlorobutadiene (.5)	ND	mg/l	0441 11/05/92	0.01	EPA Method 8270-TCLP	PM
TCLP Hexachlorethane (Limit 3)	ND	mg/l	0441 11/05/92	0.01	EPA Method 8270-TCLP	PM
TCLP Nitrobenzene (Limit 2)	ND	mg/l	0441 11/05/92	0.01	EPA Method 8270-TCLP	PM
TCLP Pentachlorophenol (100)	ND	mg/l	0441 11/05/92	0.01	EPA Method 8270-TCLP	PM



Analytical Chemistry • Utility Operations

222703 Continued

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PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
TCLP Tetrachloroethylene (.7)	ND	mg/l	0013 11/04/92	0.005	EPA Method 8240-TCLP	PM
TCLP Trichloroethylene (.5)	ND	mg/l	0013 11/04/92	0.005	EPA Method 8240-TCLP	P₩
TCLP 2,4,6-Trichlorophenol (2)	ND	mg/l	0441 11/05/92	0.01	EPA Method 8270-TCLP	PM
TCLP Vinyl Chloride (.2)	ND	mg/l	0013 11/04/92	0.01	EPA Method 8240-TCLP	PM
TCLP 2,4,5-Trichlorophenol (400)	ND	mg/l	0441 11/05/92	0.01	EPA Method 8270-TCLP	PM
TCLP Cresol (Reg. Limit 1)	ND	mg/l	0441 11/05/92	0.01	EPA Method 8270-TCLP	PM
TCLP MEK (Reg. Limit 200)	ND	mg/l	0013 11/04/92	0.05	EPA Method 8240-TCLP	PM
TCLP Pyridine (Reg. Limit 5)	ND	mg/l	0441 11/05/92	0.01	EPA Method 8270-TCLP	PM
Total Petroleum Hydrocarbons	24	mg/kg	1200 10/10/92	10	EPA Method 418.1	TEO
Metals Digestion TCLP 3010	Digested	a/s	2200 10/22/92		EPA Method 3010	KDC
Metals Digestion - TCLP 7470	Digested	A/S	2200 10/23/92		EPA Method 7470	KDC
TCLP Silver (Reg. Limit 5.0)	ND	mg/l	1749 10/26/92	.01	EPA Method 6010	GDG
TCLP Arsenic (Reg. Limit 5.0)	ND	mg/l	1749 10/26/92	.2	EPA Method 6010	GDG
TCLP Barium (Reg. Limit 100.0)	3.8	mg/l	1749 10/26/92	1.0	EPA Method 6010	GDG
TCLP Cadmium (Reg. Limit 1.0)	ND	mg/l	1749 10/26/92	.01	EPA Method 6010	GDG
TCLP Chromium (Reg. Limit 5.0)	ND	mg/l	1749 10/26/92	.02	EPA Method 6010	GDG
TCLP Mercury (Reg. Limit 0.2)	.007	mg/l	1515 11/06/92	.001	EPA Method 7470	RJC
TCLP Lead (Reg. Limit 5.0)	ND	mg/l	1749 10/26/92	.1	EPA Method 6010	GDG
TCLP Selenium (Reg. Limit 1.0)	ND	mg/l	0926 10/27/92	.2	EPA Method 6010	RJC

Reported results for TCLP analysis are corrected upward to reflect matrix spike recoveries.

I certify that the results were generated using the above specified methods.



Analytical Chemistry • Utility Operations

11/05/92

Client: ARS1

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification:

Frac Tank Decon Rinsate

Collected By: J

Date & Time Taken:

10/07/92

Other Data: AFSCAPS Tinker AFB Job #5735

Bottle Data: 3 -- Unpreserved Plastic/Glass (00)

Lab Sample Number: 222897 Received: 10/09/92

PARAMETER RESULTS UNITS ANALYZED EOL METHOD BY TCLP Liquid-Liquid Extraction 337->1 mi->mi 1507 10/22/92 EPA Method 3510 DDM TCLP Lig-Lig Extr. W/Hex Exch. 337->2 mt->mt 1440 10/22/92 EPA Method 3510 GE TCLP ZHE Volatile Extraction 13.0% Sol Completed. 1700 10/17/92 EPA Method 1311 LM TCLP Extraction Aqueous 1330 10/20/92 EPA Method 1311 RJH Esterification of Sample Extract Completed. 0900 10/27/92 EPA Method 8150 KR Fax This Report AS Soon As DONE! FAXED 06:3011/02/92 TCLP Benzene (Reg. Limit 0.5) ND mg/l 0725 10/30/92 0.005 EPA Method 8240-TCLP DM TCLP Gamma-BHC (Lindane) (.4) ND 1630 10/26/92 mg/l 0.00024 EPA Method 8080-TCLP KB TCLP Carbon Tetrachloride (.5) ND 0725 10/30/92 mg/l 0.005 EPA Method 8240-TCLP PM TCLP Chlordane (Reg. Limit 0.03) ND 1630 10/26/92 mg/l 0.00082 EPA Method 8080-TCLP KΒ TCLP Chlorobenzene (Limit 100) ND mg/l 0725 10/30/92 0.005 EPA Method 8240-TCLP PM TCLP Chloroform (Reg. Limit 6.0) ND 0725 10/30/92 mg/l 0.005 EPA Method 8240-TCLP PM TCLP 1,4 Dichlorobenzene: RL 7.5 ND mg/l 1607 10/30/92 0.029 EPA Method 8270-TCLP WJP TCLP 1,2-Dichloroethane (RL .5) ND mg/l 0725 10/30/92 0.005 EPA Method 8240-TCLP PM TCLP 1,1-Dichloroethene (.7) ND mg/l 0725 10/30/92 0.005 EPA Method 8240-TCLP PM TCLP 2,4-Dinitrotoluene (.13) ND 1607 10/30/92 mg/l 0.029 EPA Method 8270-TCLP WJP TCLP Endrin (Reg. Limit 0.02) ND mg/l 1630 10/26/92 0.00035 EPA Method 8080-TCLP KΒ



Analytical Chemistry • Utility Operations

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PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
TCLP Heptachlor (Limit .008)	ND	mg/l	1630 10/26/92	0.00018	EPA Method 8080-TCLP	KB
TCLP Heptachlor Epoxide (.008)	ND	mg/l	1630 10/26/92	0.0049	EPA Method 8080-TCLP	KB
TCLP Hexachlorobenzene (.13)	ND	mg/l	1607 10/30/92	0.1	EPA Method 8270-TCLP	WJP
TCLP Hexachlorobutadiene (.5)	ND	mg/l	1607 10/30/92	0.029	EPA Method 8270-TCLP	WJP
TCLP Hexachlorethane (Limit 3)	ND	mg/l	1607 10/30/92	0.029	EPA Method 8270-TCLP	M7b
TCLP Nitrobenzene (Limit 2)	ND	mg/l	1607 10/30/92	0.029	EPA Method 8270-TCLP	MJP
TCLP Pentachlorophenol (100)	ND	mg/l	1607 10/30/92	0.029	EPA Method 8270-TCLP	WJP
TCLP Tetrachloroethylene (.7)	ND	mg/l	0725 10/30/92	0.005	EPA Method 8240-TCLP	PM
TCLP Toxaphene (Reg. Limit 0.5)	ND	mg/l	1630 10/26/92	0.014	EPA Method 8080-TCLP	KB
TCLP Trichloroethylene (.5)	ND	mg/l	0725 10/30/92	0.005	EPA Method 8240-TCLP	PM
TCLP 2,4,6-Trichlorophenol (2)	ND	mg/l	1607 10/30/92	0.029	EPA Method 8270-TCLP	WJP
TCLP Vinyl Chloride (.2)	ND	mg/l	0725 10/30/92	0.01	EPA Method 8240-TCLP	PM
TCLP 2,4 D (Reg. Limit 10)	ND	mg/l	1430 10/27/92	0.071	EPA Method 8150-TCLP	KB
TCLP 2,4,5-Trichlorophenol (400)	ND	mg/l	1607 10/30/92	0.029	EPA Method 8270-TCLP	MIL
TCLP 2,4,5-TP (Silvex) (RL 1)	ND	mg/l	1430 10/27/92	0.01	EPA Method 8150-TCLP	KB
TCLP Cresol (Reg. Limit 1)	ND	mg/l	1607 10/30/92	0.029	EPA Method 8270-TCLP	WJP
TCLP MEK (Reg. Limit 200)	13	mg/l	0725 10/30/92	0.05	EPA Method 8240-TCLP	PM
TCLP Methoxychlor (RL 10)	ND	mg/l	1630 10/26/92	0.011	EPA Method 8080-TCLP	KB
TCLP Pyridine (Reg. Limit 5)	ND	mg/l	1607 10/30/92	0.029	EPA Method 8270-TCLP	WJP
Metals Digestion - TCLP 3010	Digested	a/s	2200 10/22/92		EPA Method 3010	KDC
Metals Digestion - 7470	Digested	a/s	0830 10/22/92	•		JHL
TCLP Silver (Reg. Limit 5.0)	ND	mg/l	1749 10/26/92	.01	EPA Method 6010	GDG
TCLP Arsenic (Reg. Limit 5.0)	ND	mg/l	1749 10/26/92	.2	EPA Method 6010	GDG
TCLP Barium (Reg. Limit 100.0)			1749 10/26/92	1.0	EPA Method 6010	GDG



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PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
TCLP Cadmium (Reg. Limit 1.0)	ND	mg/l	1749 10/26/92	.01	EPA Method 6010	GDG
TCLP Chromium (Reg. Limit 5.0)	.03	mg/l	1749 10/26/92	.02	EPA Method 6010	GDG
TCLP Mercury (Reg. Limit 0.2)	ND	mg/l	1130 10/28/92	.001	EPA Method 7470	LW
TCLP Lead (Reg. Limit 5.0)	ND	mg/l	1749 10/26/92	.1	EPA Method 6010	GDG
TCLP Selenium (Reg. Limit 1.0)	ND	mg/l	0926 10/27/92	.2	EPA Method 6010	RJC

Quality Assurance for the SET with Sample 222897

Sample #	Description	Result	Units TCLP		Value Spk Conc. (Reg. Limit	Percent 5.0)	Time	Date	Ву
	Blank	<.01	mg/l				1749	10/26/92	GDG
	Standard	.20	mg/l	.20		100	1749	10/26/92	GDG
	Standard	.99	mg/l	1.0		101	1749	10/26/92	GDG
	Standard	1.0	mg/l	1.0		100	1749	10/26/92	GDG
	Standard	2.1	mg/l	2.0		105	1749	10/26/92	GDG
222697	Duplicate	ND	mg/l	ND		100	1749	10/26/92	GDG
222697	Spike		mg/l		1.0	98	1749	10/26/92	GDG
222699	Spike		mg/l		1.0	97	1749	10/26/92	GDG
222701	Spike		mg/l		1.0	97	1749	10/26/92	GDG
222703	Spike		mg/l		1.0	97	1749	10/26/92	GDG
222711	Spike		mg/l		1.0	99	1749	10/26/92	GDG
222768	Spike		mg/l		1.0	97	1749	10/26/92	GDG
222816	Spike		mg/l		1.0	95	1749	10/26/92	GDG
			TCLP :	Arsenic	(Reg. Limit	5.0)			
	Blank	<.2	mg/l				1749	10/26/92	GDG
	Standard	1.0	mg/l	1.0		100	1749	10/26/92	GDG
	Standard	5.1	mg/l	5.0		102	1749	10/26/92	GDG
	Standard	4.9	mg/l	5.0		102	1749	10/26/92	GDG
	Standard	9.9	mg/l	10		101	1749	10/26/92	GDG
222697	Duplicate	ND	mg/l	ND		100	1749	10/26/92	GDG
222697	Spike		mg/l		5.0	102	1749	10/26/92	GDG
222699	Spike		mg/l		5.0	99	1749	10/26/92	GDG
222701	Spike		mg/l		5.0	103	1749	10/26/92	G DG
222703	Spike		mg/l		5.0	101	1749	10/26/92	GDG
222711	Spike		mg/l		5.0	104	1749	10/26/92	GDG
222768	Spike		mg/l		5.0	101	1749	10/26/92	GDG
222816	Spike		mg/l		5.0	103	1749	10/26/92	GDG
			TCLP 1	Barium ((Reg. Limit :	100.0)			
	Blank	<1.0	mg/l				1749	10/26/92	GDG
	Standard	1.0	mg/l	1.0	,	100	1749	10/26/92	GDG
	Standard	4.9	mg/l	5.0		102	1749	10/26/92	GDG
	Standard	4.9	mg/l	5.0	•	102	1749	10/26/92	GDG
	Standard	10	mg/l	10		100	1749	10/26/92	GDG

Continued



Analytical Chemistry • Utility Operations

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0	Dii	Decul *	llaita	Dum/Etd V	Inlus Cok	Cono !	Parcent	Time	Date	Ву
Sample #	Description Duplicate	Result ND	Units mg/l	Dup/Std V	atue Spk		Percent 100	1749	10/26/92	GD(
222697	•	NU		NU	5.0		97	1749	10/26/92	GDO
222697	Spike		mg/l		5.0		93	1749	10/26/92	GD
222699	Spike		mg/l		5.0		94	1749	10/26/92	GD
222701	Spike		mg/l		5.0		94 91	1749	10/26/92	GD
222703	Spike		mg/l		5.0		98	1749	10/26/92	GD
222711	Spike		mg/l		5.0		98	1749	10/26/92	GD
222768	Spike Spike		mg/l mg/l		5.0		100	1749	10/26/92	GD
222816	spike			Cadmium		Limit 1		1147	10/20/72	•
	Blank	<.01	mg/l	Cuumium	(Mog.	ormic i	• • ,	1749	10/26/92	GD
	Standard	.50	mg/l	.50			100	1749	10/26/92	GD
	Standard	.95	mg/l	1.0			105	1749	10/26/92	GD
	Standard	2.4	mg/l	2.5			104	1749	10/26/92	GD
	Standard	4.8	mg/l	5.0			104	1749	10/26/92	GD
222697	Duplicate	ND	mg/l	ND			100	1749	10/26/92	GD
222697	Spike	NO	mg/l	110	1.0		89	1749	10/26/92	GD
222699	Spike		mg/l		1.0		91	1749	10/26/92	GD
222701	Spike		mg/l		1.0		91	1749	10/26/92	GD
222703	Spike		mg/l		1.0		90	1749	10/26/92	GD
222711	Spike		mg/l		5.0		93	1749	10/26/92	GD
222768	Spike		mg/l		1.0		96	1749	10/26/92	GD
222816	Spike		mg/l		1.0		92	1749	10/26/92	GD
	Sp.			Chromium			5.0)			
	Blank	<.02	mg/l		,,.		,	1749	10/26/92	GD
	Standard	1.0	mg/l	1.0			100	1749	10/26/92	GD
	Standard	5.2	mg/l	5.0			104	1749	10/26/92	GD
	Standard	5.0	mg/l	5.0			100	1749	10/26/92	GD
	Standard	9.8	mg/l	10			102	1749	10/26/92	GD
222697	Duplicate	ND	mg/l	ND			100	1749	10/26/92	GD
222697	Spike		mg/l		1.0		99	1749	10/26/92	GD
222699	Spike		mg/l		5.0		98	1749	10/26/92	GD
222701	Spike		mg/l		5.0		98	1749	10/26/92	GD
222703	Spike		mg/l		5.0		97	1749	10/26/92	GD
222711	Spike		mg/l		5.0		100	1749	10/26/92	GD
222768	Spike		mg/l		5.0		101	1749	10/26/92	GD
222816	Spike		mg/l		5.0		99	1749	10/26/92	GD
	•			Mercury		Limit 0	.2)			
	Blank	.01	mg/l	-				1130	10/28/92	LW
	Blank	.002	mg/l					1130	10/28/92	LW
	Standard	.010	mg/l	.010			100	1130	10/28/92	LW
	Standard	.011	mg/l	.010			110	1130	10/28/92	LW
	Standard	.010	mg/l	.010			100	1130	10/28/92	EW
			•					1130	10/28/92	LW
	Standard	.011	mg/l	.010			110	1130	10/20/72	
	Standard Standard	.011 .010	mg∕l mg/l	.010 .010	1		100		10/28/92	LW
	Standard Standard Standard	.011 .010 .010	mg/l mg/l mg/l	.010 .010 .010				1130 1130		

Continued



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Sample #	Description	Result	Units	Dup/Std Va	ilue Spk C	onc Peri	cent Time	Date	Ву
Sample #	Standard	.010	mg/l	.010	itue spk c	100	1130	10/28/92	LW
	Standard	.011	mg/l	.010		110	1130	10/28/92	LW
222416	Duplicate	ND	mg/l	ND		100		10/28/92	LW
222768	Duplicate	ND	mg/l	.001		300		10/28/92	LW
223604	Spike	NO	mg/l	.001	.010	81	1130	10/28/92	LW
223073	Spike		mg/l		.010	67	1130	10/28/92	ĹW
223182	Spike		mg/l		.010	100		10/28/92	EW
221766	Spike		mg/l		.010	86	1130	10/28/92	LW
222101	Spike		mg/l		.010	91	1130	10/28/92	EW
222102	Spike		mg/l		.010	99	1130	10/28/92	LW
222162	Spike		mg/l		.010	109		10/28/92	LW
222416	Spike		mg/l		.010	98	1130	10/28/92	LW
222897	Spike		mg/l		.010	90	1130	10/28/92	LW
222104	Spike		mg/t		.010	95	1130	10/28/92	LW
222107	Spike		mg/l		.010	85	1130	10/28/92	LW
222108	Spike		mg/l		.010	74	1130	10/28/92	LW
222113	Spike		mg/l		.010	60	1130	10/28/92	LW
222115	Spike		mg/l		.010	68	1130	10/28/92	LW
222116	Spike		mg/l		.010	51	1130	10/28/92	LW
222117	Spike		mg/l		.010	97	1130	10/28/92	ŁW
222768	Spike		mg/l		.010	96	1130	10/28/92	LW
222816	Spike		mg/l		.010	84	1130	10/28/92	LW
2220.0	op i ko			Lead (F		mit 5.0)			
	Blank	<.1	mg/l	,-			1749	10/26/92	GDG
	Standard	.99	mg/l	1.0		101		10/26/92	GDG
	Standard	5.1	mg/l	5.0		102		10/26/92	GDG
	Standard	4.9	mg/l	5.0		102		10/26/92	GDG
	Standard	10	mg/l	10		100		10/26/92	GDG
222697	Duplicate	ND	mg/l	ND		100		10/26/92	GDG
222697	Spike		mg/l		1.0	96	1749	10/26/92	GDG
222699	Spike		mg/l		5.0	95	1749	10/26/92	GDG
222701	Spike		mg/l		5.0	95	1749	10/26/92	GDG
222703	Spike		mg/l		5.0	96	1749	10/26/92	GDG
222711	Spike		mg/l		5.0	98	1749	10/26/92	GDG
222766	Spike		mg/l		5.0	96	1749	10/26/92	GDG
222768	Spike		mg/l		5.0	98	1749	10/26/92	GDG
222816	Spike		mg/l		5.0	98	1749	10/26/92	GDG
				elenium		Limit 1.			
	Blank	<.2					0926	10/27/92	RJC
	Blank	<.1					0926	10/27/92	RJC
	Standard	.98		1.0		102		10/27/92	RJC
	Standard	.99		1.0		101		10/27/92	RJC
	Standard	4.9		5.0	;	. 102		10/27/92	RJC
	Standard	4.3		5.0		115		10/27/92	RJC
	Standard	.94		1.0		106		10/27/92	RJC
222697	Duplicate	ND	mg/l	ND		100		10/27/92	RJC

Continued



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Sample #	Description	Result	Units	Dup/Std Value	Spk Conc.	Percent	Time	Date	Ву
222697	Spike		mg/l		1.0	98	0926	10/27/92	RJC
222699	Spike		mg/l		1.0	105	0926	10/27/92	RJC
222701	Spike		mg/l		1.0	105	0926	10/27/92	RJC
222702	Spike		mg/l		1.0	100	0926	10/27/92	RJC
222703	Spike		mg/l		1.0	99	0926	10/27/92	RJC
222711	Spike		mg/l		1.0	100	0926	10/27/92	RJC
222768	Spike		mg/l		1.0	99	0926	10/27/92	RJC
222816	Spike		mg/l		1.0	95	0926	10/27/92	RJC
222897	Spike		mg/l		1.0	89	0926	10/27/92	RJC

Reported results for TCLP analysis are corrected upward to reflect matrix spike recoveries.

I certify that the results were generated using the above specified methods.

APPENDIX P

ANALYTICAL RESULTS FROM LABORATORY AND EQUIPMENT BLANKS



Analytical Chemistry • Utility Operations

11/05/92

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification:

GC Lab Blank 1

Collected By:

Date & Time Taken:

09/29/92 1130

Other Data: AFSCAPS Job # 5735, Tinker AFB

Bottle Data: 2 -- 40 ml Glass Vial (Zero Headspace) with a Teflon Lined Lid (04)

Lab Sample Number: 222088 Received: 09/30/92

Client: ARS1

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Xylenes	ND	ug/l	1719 10/27/92	5.0	EPA Method 8240	GO
Acrolein	ND	ug/l	1719 10/27/92	100	EPA Method 8240	GO
Acrylonitrile	ND	ug/l	1719 10/27/92	100	EPA Method 8240	GO
Benzene	ND	ug/l	1719 10/27/92	5.0	EPA Method 8240	GO
Bromoform	ND	ug/l	1719 10/27/92	5.0	EPA Method 8240	GO
Bromomethane	ND	ug/l	1719 10/27/92	10	EPA Method 8240	GO
Carbon Tetrachloride	ND	ug/l	1719 10/27/92	5.0	EPA Method 8240	GO
Chlorobenzene	ND	ug/l	1719 10/27/92	5.0	EPA Method 8240	GO
Chloroethane	ND	ug/l	1719 10/27/92	10	EPA Method 8240	GO
2-Chloroethylvinyl ether	ND	ug/l	1719 10/27/92	10	EPA Method 8240	GO
Chloroform	ND	ug/l	1719 10/27/92	5.0	EPA Method 8240	ĝ0
Chloromethane	ND	ug/l	1719 10/27/92	10	EPA Method 8240	GO
Dibromochloromethane	ND	ug/l	1719 10/27/92	5.0	EPA Method 8240	GO
Bromodichloromethane	ND	ug/l	1719 10/27/92	5.0	EPA Method 8240	GO
1,1-Dichloroethane	ND	ug/l	1719 10/27/92	5.0	EPA Method 8240	GO
1,2-Dichloroethane	ND	ug/l	1719 10/27/92	5.0	EPA Method 8240	GO
1,1-Dichloroethene	ND	ug/l	1719 10/27/92	5.0	EPA Method 8240	GO



Analytical Chemistry • Utility Operations

222088 Continued

Page 2

	D D G III D G	INTEG	ANATVOED	FOT	METHOD	BY
PARAMETER	RESULTS	UNITS	ANALYZED 1719 10/27/92	EQL 5.0	EPA Method 8240	GO
trans-1,2-Dichloroethene	ND	ug/l	1719 10/21/92	5.0	EPA METHOD 0240	40
Dichlorodiflouromethane	ND	ug/l	1719 10/27/92	1.0	EPA Method 8240	GO
1,2-Dichloropropane	ND	ug/l	1719 10/27/92	5.0	EPA Method 8240	GO
cis-1,3-Dichloropropene	ND	ug/l	1719 10/27/92	5.0	EPA Method 8240	GO
Ethyl benzene	ND	ug/l	1719 10/27/92	5.0	EPA Method 8240	GO
Methylene Chloride	ND	ug/l	1719 10/27/92	5.0	EPA Method 8240	GO
1,1,2,2-Tetrachloroethane	ND	ug/l	1719 10/27/92	5.0	EPA Method 8240	GO
Tetrachloroethene	ND	ug/l	1719 10/27/92	5.0	EPA Method 8240	GO
Toluene	ND	ug/l	1719 10/27/92	5.0	EPA Method 8240	GO
1,1,1-Trichloroethane	ND	ug/l	1719 10/27/92	5.0	EPA Method 8240	GO
1,1,2-Trichloroethane	ND	ug/l	1719 10/27/92	5.0	EPA Method 8240	GO
Trichloroethene	ND	ug/l	1719 10/27/92	5.0	EPA Method 8240	GO
Trichlorofluoromethane	ND	ug/l	1719 10/27/92	10	EPA Method 8240	GO
Vinyl Chloride	ND	ug/l	1719 10/27/92	10	EPA Method 8240	GO
trans-1,3-Dichloropropene	ND	ug/l	1719 10/27/92	5.0	EPA Method 8240	GO

I certify that the results were generated using the above specified methods.



Analytical Chemistry • Utility Operations

11/05/92

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification:

WTP-RB1

Collected By:

JPJ

Date & Time Taken:

09/26/92 1150

Other Data: AFSCAPS Job #5735, Tinker AFB

Bottle Data: 1 -- 40 ml Glass Vial (Zero Headspace) with a Teflon Lined Lid (04)

Lab Sample Number: 221848 Received: 09/28/92 Client: ARS1

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Xylenes	ND	ug/l	1644 10/27/92	5.0	EPA Method 8240	GO
Acrolein	ND	ug/l	1644 10/27/92	100	EPA Method 8240	GO
Acrylonitrile	ND	ug/l	1644 10/27/92	100	EPA Method 8240	GO
Benzene	ND	ug/l	1644 10/27/92	5.0	EPA Method 8240	GO
Bromoform	ND	ug/l	1644 10/27/92	5.0	EPA Method 8240	GO
Bromomethane	ND	ug/l	1644 10/27/92	10	EPA Method 8240	60
Carbon Tetrachloride	ND	ug/l	1644 10/27/92	5.0	EPA Method 8240	GO
Chlorobenzene	ND	ug/l	1644 10/27/92	5.0	EPA Method 8240	GO
Chloroethane	ND	ug/l	1644 10/27/92	10	EPA Method 8240	G 9
2-Chloroethylvinyl ether	ND	ug/l	1644 10/27/92	10	EPA Method 8240	GO
Chloroform	ND	ug/l	1644 10/27/92	5.0	EPA Method 8240	GO
Chloromethane	ND	ug/l	1644 10/27/92	10	EPA Method 8240	GO
Dibromochloromethane	ND	ug/l	1644 10/27/92	5.0	EPA Method 8240	GO
Bromodichloromethane	ND	ug/l	1644 10/27/92	5.0	EPA Method 8240	GO
1,1-Dichloroethane	ND	ug/l	1644 10/27/92	5.0	EPA Method 8240	GO
1,2-Dichloroethane	ND	ug/l	1644 10/27/92	5.0	EPA Method 8240	GO
1,1-Dichloroethene	ND	ug/l	1644 10/27/92	5.0	EPA Method 8240	GO

Analytical Chemistry • Utility Operations

221848 Continued

Page 2

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
trans-1,2-Dichloroethene	ND	ug/l	1644 10/27/92	5.0	EPA Method 8240	GO
Dichlorodiflouromethane	ND	ug/l	1644 10/27/92	1.0	EPA Method 8240	GO
1,2-Dichloropropane	ND	ug/l	1644 10/27/92	5.0	EPA Method 8240	GO
cis-1,3-Dichloropropene	ND	ug/l	1644 10/27/92	5.0	EPA Method 8240	GO
Ethyl benzene	ND	ug/l	1644 10/27/92	5.0	EPA Method 8240	GO
Methylene Chloride	ND	ug/l	1644 10/27/92	5.0	EPA Method 8240	GO
1,1,2,2-Tetrachloroethane	ND	ug/l	1644 10/27/92	5.0	EPA Method 8240	GO
Tetrachloroethene	ND	ug/l	1644 10/27/92	5.0	EPA Method 8240	GO
Toluene	ND	ug/l	1644 10/27/92	5.0	EPA Method 8240	GO
1,1,1-Trichloroethane	ND	ug/l	1644 10/27/92	5.0	EPA Method 8240	GO
1,1,2-Trichloroethane	ND	ug/l	1644 10/27/92	5.0	EPA Method 8240	GO
Trichloroethene	ND	ug/l	1644 10/27/92	5.0	EPA Method 8240	GO
Trichlorofluoromethane	ND	ug/l	1644 10/27/92	10	EPA Method 8240	GO
Vinyl Chloride	ND	ug/l	1644 10/27/92	10	EPA Method 8240	GO
trans-1,3-Dichloropropene	ND	ug/l	1644 10/27/92	5.0	EPA Method 8240	GO

I certify that the results were generated using the above specified methods.



Analytical Chemistry • Utility Operations

11/05/92

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification:

WTP-RB1

Collected By:

JPJ

Date & Time Taken:

09/23/92 1650

Other Data: AFSCAPS Job #5735, Tinker AFB

Bottle Data: 2 -- 40 ml Glass Vial (Zero Headspace) with a Teflon Lined Lid (04)

Lab Sample Number: 221724 Received: 09/25/92 Client: ARS1

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Xylenes	ND	ug/l	1535 10/27/92	5.0	EPA Method 8240	GO
Acrolein	ND	ug/l	1535 10/27/92	100	EPA Method 8240	GO
Acrylonitrile	ND	ug/l	1535 10/27/92	100	EPA Method 8240	GO
Benzene	ND	ug/l	1535 10/27/92	5.0	EPA Method 8240	GO
Bromoform	ND	ug/l	1535 10/27/92	5.0	EPA Method 8240	GO
Bromomethane	ND	ug/l	1535 10/27/92	10	EPA Method 8240	GO
Carbon Tetrachloride	ND	ug/l	1535 10/27/92	5.0	EPA Method 8240	G0
Chlorobenzene	ND	ug/l	1535 10/27/92	5.0	EPA Method 8240	GO
Chloroethane	ND	ug/l	1535 10/27/92	10	EPA Method 8240	GĐ
2-Chloroethylvinyl ether	ND	ug/l	1535 10/27/92	10	EPA Method 8240	GO
Chloroform	ND	ug/l	1535 10/27/92	5.0	EPA Method 8240	GO
Chloromethane	ND	ug/l	1535 10/27/92	10	EPA Method 8240	GO
Dibromochloromethane	ND	ug/l	1535 10/27/92	5.0	EPA Method 8240	GO
Bromodichloromethane	ND	ug/l	1535 10/27/92	5.0	EPA Method 8240	GO
1,1-Dichloroethane	ND	ug/l	1535 10/27/92	5.0	EPA Method 8240	GO
1,2-Dichloroethane	ND	ug/l	1535 10/27/92	5.0	EPA Method 8240	GO
1,1-Dichloroethene	ND	ug/l	1535 10/27/92	5.0	EPA Method 8240	GO



Analytical Chemistry • Utility Operations

11/05/92

221724 Continued

Page 2

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
trans-1,2-Dichloroethene	ND	ug/l	1535 10/27/92	5.0	EPA Method 8240	GO
Dichlorodiflouromethane	ND	ug/l	1535 10/27/92	1.0	EPA Method 8240	GO
1,2-Dichloropropane	ND	ug/l	1535 10/27/92	5.0	EPA Method 8240	GO
cis-1,3-Dichloropropene	ND	ug/l	1535 10/27/92	5.0	EPA Method 8240	GO
Ethyl benzene	ND	ug/l	1535 10/27/92	5.0	EPA Method 8240	GO
Methylene Chloride	ND	ug/l	1535 10/27/92	5.0	EPA Method 8240	GO
1,1,2,2-Tetrachloroethane	ND	ug/l	1535 10/27/92	5.0	EPA Method 8240	GO
Tetrachloroethene	ND	ug/l	1535 10/27/92	5.0	EPA Method 8240	GO
Toluene	ND	ug/l	1535 10/27/92	5.0	EPA Method 8240	GO
1,1,1-Trichloroethane	ND	ug/l	1535 10/27/92	5.0	EPA Method 8240	GO
1,1,2-Trichloroethane	ND	ug/l	1535 10/27/92	5.0	EPA Method 8240	GO
Trichloroethene	ND	ug/l	1535 10/27/92	5.0	EPA Method 8240	GO
Trichlorofluoromethane	ND	ug/l	1535 10/27/92	10	EPA Method 8240	GO
Vinyl Chloride	ND	ug/l	1535 10/27/92	10	EPA Method 8240	GO
trans-1,3-Dichloropropene	ND	ug/l	1535 10/27/92	5.0	EPA Method 8240	GO

I certify that the results were generated using the above specified methods.



Analytical Chemistry • Utility Operations

11/05/92

Client: ARS1

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification:

NTA-B05-B EB-Bailer

Collected By:

1,1-Dichloroethene

JPJ

Date & Time Taken:

09/16/92 1520

Other Data: Tinker AFB

Bottle Data: 1 -- 40 ml Glass Vial (Zero Headspace) with a Teflon Lined Lid (04)

Lab Sample Number: 221087 Received: 09/18/92

PARAMETER RESULTS UNITS ANALYZED EQL METHOD BY Xylenes ug/l 1254 09/25/92 5.0 EPA Method 8240 PM Acrolein ND ug/l 1254 09/25/92 100 EPA Method 8240 PM Acrylonitrile 1254 09/25/92 100 EPA Method 8240 ND ug/l 1254 09/25/92 EPA Method 8240 Benzene ND ug/l 5.0 Bromoform ND ug/l 1254 09/25/92 5.0 EPA Method 8240 Bromomethane ND ug/l 1254 09/25/92 10 EPA Method 8240 Carbon Tetrachloride ND ug/l 1254 09/25/92 5.0 EPA Method 8240 Chlorobenzene ND ug/l 1254 09/25/92 5.0 EPA Method 8240 PM Chloroethane ND ug/l 1254 09/25/92 10 EPA Method 8240 PM 2-Chloroethylvinyl ether 1254 09/25/92 10 EPA Method 8240 PM ND ug/l Chloroform 1254 09/25/92 EPA Method 8240 ND ug/l 5.0 Chloromethane ND ug/l 1254 09/25/92 10 EPA Method 8240 PM Dibromochloromethane EPA Method 8240 ND ug/l 1254 09/25/92 5.0 Bromodichloromethane 1254 09/25/92 EPA Method 8240 ND ug/l 5.0 PM 1,1-Dichloroethane ug/l 1254 09/25/92 5.0 EPA Method 8240 1,2-Dichloroethane EPA Method 8240 ND ug/l 1254 09/25/92 5.0 PM

1254 09/25/92

5.0

EPA Method 8240

ug/l



Analytical Chemistry • Utility Operations

221087 Continued

Page 2

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
trans-1,2-Dichloroethene	ND	ug/l	1254 09/25/92	5.0	EPA Method 8240	PM
Dichlorodiflouromethane	ND	ug/l	1254 09/25/92	1.0	EPA Method 8240	PM
1,2-Dichloropropane	ND	ug/l	1254 09/25/92	5.0	EPA Method 8240	PM
cis-1,3-Dichloropropene	ND	ug/l	1254 09/25/92	5.0	EPA Method 8240	PM
Ethyl benzene	ND	ug/l	1254 09/25/92	5.0	EPA Method 8240	PM
Methylene Chloride	ND	ug/l	1254 09/25/92	5.0	EPA Method 8240	PM
1,1,2,2-Tetrachloroethane	ND	ug/l	1254 09/25/92	5.0	EPA Method 8240	PM
Tetrachloroethene	ND	ug/l	1254 09/25/92	5.0	EPA Method 8240	PM
Toluene	ND	ug/l	1254 09/25/92	5.0	EPA Method 8240	PM
1,1,1-Trichloroethane	ND	ug/l	1254 09/25/92	5.0	EPA Method 8240	PM
1,1,2-Trichloroethane	ND	ug/l	1254 09/25/92	5.0	EPA Method 8240	PM
Trichloroethene	ND	ug/l	1254 09/25/92	5.0	EPA Method 8240	PM
Trichlorofluoromethane	ND	ug/l	1254 09/25/92	10	EPA Method 8240	PM
Vinyl Chloride	ND	ug/l	1254 09/25/92	10	EPA Method 8240	PM
trans-1,3-Dichloropropene	ND	ug/l	1254 09/25/92	5.0	EPA Method 8240	PM

I certify that the results were generated using the above specified methods.

APPENDIX Q

SAMPLE CHAIN OF CUSTODY FORMS

CONTACT: That Jemsel

JOB NAME: AFSCAPS

JOB # 5435 PO #_

LOCATION: Timber AFB

APPLIED RESEARCH ASSOCIATES, INC.

RR #1, Box 120-A Waterman Road South Royalton, Vermont 05068

4300 San Mateo Blvd. NE Suite A220

Albuquerque, New Mexico 87110 (505) 883-3636 FAX: (505) 883-3673

PLED BY: 383 PI

se send results to office circled above

FAX: (802) 763-8283

(802) 763-8348

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APPLIED RESEARCH ASSOCIATES, INC. CONTACT: SACK SEMSEK JOB NAME: AFSCAPS

LOCATION: Tinker AFB JOB # 5935 PO #_

South Royalton, Vermont 05068 (802) 763-8348 FAX: (802) 763-8283 RR #1, Box 120-A Waterman Road

4300 San Mateo Blvd. NE

Albuquerque, New Mexico 87110 (505) 883-3636 FAX: (505) 883-3673 Suite A220

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Pape 202

CHAIN OF CUSTODY

APPLIED RESEARCH ASSOCIATES, INC.

CONTACT: SACK TEMSER

JOB NAME: AFSCARS

JOB # 5435 PO #_

LOCATION: TINKU AFB

4300 San Mateo Blvd. NE

Albuquerque, New Mexico 87110 (505) 883-3636

South Royalton, Vermont 05068 (802) 763-8348

RR #1, Box 120-A Waterman Road FAX: (802) 763-8283

FAX: (505) 883-3673

SAMPLED BY: ITT

Please send results to office circled above.

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APPLIED RESEARCH ASSOCIATES, INC.

CONTACT: JCK JEMSEK

JOB NAME: AFSCAPS

JOB # 5735 PO #

LOCATION: TOWER AFB

RR #1, Box 120-A Waterman Road

4300 San Mateo Blvd. NE

South Royalton, Vermont 05068 Albuquerque, New Mexico 87110 (505) 883-3636 Suite A220

FAX: (505) 883-3673

FAX: (802) 763-8283

(802) 763-8348

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CONTACT: THE JEMSEK

JOB NAME: AFSCAR TIME AIR

JOB # 5435 PO#

LOCATION: T. LES AFES CHO

APPLIED RESEARCH ASSOCIATES, INC.

RR #1, Box 120-A

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South Royalton, Vermont 05068 Albuquerque, No. (802) 763-8348 (505

Suite A220 Suite A220 Albuquerque, New Mexico 87110 (505) 883-3636

FAX: (505) 883-3673

Please send results to office circled above

FAX: (802) 763-8283

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CONTACT: SACK JEMSEK

JOB NAME: AFSCAPS

JOB # 5435 PO #

LOCATION: Tinker AFB

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APPLIED RESEARCH ASSOCIATES, INC.

CONTACT: SACK JEMSEK
JOB NAME: AFSCAPS
JOB # 5435 PO #
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CONTACT: JACK JEMSER

JOB NAME: AFSCAPS

JOB # 5435 PO #

LOCATION: Tinker AFB, OK

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CONTACT: SACK SEMSEK

JOB NAME: AFSCAPS

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APPLIED RESEARCH ASSOCIATES, INC.

CONTACT: SACK SEMSEK
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FAX: (505) 883-3673

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CONTACT: SACK SEMSEK

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JOB NAME: AFSCAPS

JOB # 5/35 PO #_

LOCATION: TINLUAFE OK

APPLIED RESEARCH ASSOCIATES, INC.

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APPLIED RESEARCH ASSOCIATES, INC.

CONTACT: JACK JEMSEK LOCATION: TIME AFB JOB # 5435 PO #_ JOB NAME: AFSCA US

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Waterman Road

metals, vointiles, seni-vuls (505) 883-3636 FAX: (505) 883-3673

FAX: (802) 763-8283

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CONTACT: SACK JEM SEK

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APPLIED RESEARCH ASSOCIATES, INC. CONTACT: SAUL JEPISEL

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	OSC-1807-551	٤	(8:00	:) <u>:</u>				7			// ভ
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	10TP-866-551	11	11:40	11	11			>				® 13-14'
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	WTP- 646	9hr. HZ	1.60	woter	2 Vials			7				
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RELINQUISHED BY:	_		ij		TIME:	RECÉIN	/ED BY:				DATE:	TIME
RELINQUISHED BY:) BY:	DATE:	ij	L	TIME:	RECEIV	RECEIVED BY:				DATE:	TIME:
METHOD OF SHIPMENT:	HIPMENT:					REMARKS:	PKS:					

APPLIED RESEARCH ASSOCIATES, INC.

LOCATION: TiNKOT AFR, OK CONTACT: SACK JEMLEK JOB # 5435 PO # JOB NAME: AFSCAPS

South Royalton, Vermont 05068 (802) 763-8348 FAX: (802) 763-8283 RR #1, Box 120-A Waterman Road

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Albuquerque, New Mexico 87110 (505) 883-3636 FAX: (505) 883-3673

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SAMPLED BY:	393		Please send		ults to off	results to office circled above.	above.				CASE	PASE / DEUT PAL OUS
									ANALY	SIS RE	ANALYSIS REQUESTED	PIELD LOG BOOK REP NO. PAGE(S)
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CONTACT: SACK JEMSEK
JOB NAME: AFSCAPS
JOB # 5435 PO #
LOCATION: Timker AFB OK

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| BASE VENTION ONLY

(505) 883-3636

SAMPLED BY: 5/5	: 5/5		Please send		results to office circled above.	ice circle	d above	4				K.Ase	Base peuting ong	San 1
									VV	ALYSIS	ANALYSIS REQUESTAD	STU	i.	RELD LOG BOOK REP NO. PAGE(S)
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T. Metals: Cd, Cr, Ba, Pb, Zw, As, Hg, Nr

CONTACT: SACK SEMSEK

JOB NAME: AFSCAPS

JOB # 5435 PO #_

LOCATION: TINKER AFB

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Albuquerque, New Mexico 87110

SAMPLED BY: 38

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FAX: (802) 763-8283

SAINIFLED DT: 15	21: -153		riease send	_	results to office circled above.	ce circle	d above					
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METHOD OF SHIPMENT:	SHIPMENT:					REMARKS:	KS:					

CONTACT: JACK JEMSK

JOB NAME: AFSCAPS

JOB # 5435 PO #

LOCATION: CASSWELL AFB, TK

APPLIED RESEARCH ASSOCIATES, INC.

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4300 San Mateo Blvd. NE

Suite A220 Albuquerque, New Mexico 87110 (505) 883-3636

FAX: (505) 883-3673

Please send results to office circled above SAMPLED RY: (115

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LAB NUMBER	FIELD IDENTIFICATION	DATE	TIME	SAMPLE MATRIX	CONTAINER FILTERED VOLITYPE (Y/N)		PRESER. VATIVE	38/4 1.8/4 06/28	1:01	3211.			REMARKS
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ST3 Nada, fra

CONTACT: TACK SEMSEK
JOB NAME: AFSCAPS
JOB # 5435 PO #
LOCATION: Timer AFB OK

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FAX: (505) 883-3673

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								3	ANALYSIS REQUESTED	UESTED	FIELD LOG BOOK REF NO PAGE(S)
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METHOD OF SHIPMENT:	IIPMENT:					REMARKS:	KS:				

metals, semivolatiles, volatiles

CONTACT: SACLE JEMSOK

JOB NAME: AFSCAPS

JOB # 5435 PO #_

LOCATION: Tinky AFB, OK

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SAMPLED BY: $5\rho S$

se send results to office circled above.

FAX: (802) 763-8283

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LAB NUMBER	FIELD IDENTIFICATION	DATE	TIME	SAMPLE	CONTAINER FILTERED VOLTYPE (V/N)	FIELD PRESER. (Y/N) VATIVE	13/16		REMARKS
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	FPA-65-553	,,		٠,	10 2		1		G 151
		12/11/6		١.	••		`		6 5
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METHOD OF SHIPMENT:	SHIPMENT:					REMARKS:			

CONTACT: SACK SEMSEK

JOB NAME: AFSCAPS

JOB # 5435 PO #_

LOCATION: TINKE AFB

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SAMPLEN RV. TAT

FAX: (802) 763-8283

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CONTACT: TACK TEMSEK

JOB NAME: AFSCAPS

JOB # 5435 PO # 54

LOCATION: Tinke AFB, OK

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FAX: (505) 883-3673

SAMPLED BY: IPI

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Please send results to office circled above.

FAX: (802) 763-8283

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APPLIED RESEARCH ASSOCIATES, INC.

CONTACT: Spele Semsek JOB NAME: AFSCAPS JOB # 5435 PO #_ LOCATION: TINKE AFB DK

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CA, Cr, Ba, Pb, Zw, As, Hs, Ni BASE/NEUTKAL ONLY Metals, Volotiles, semi volotiles